HEALTH BUILDING NOTE 21

MC104

Maternity Department

DEPARTMENT OF HEALTH
and the WELSH OFFICE

Health Building Notes: Preface

Health Building Notes (HBN) are guides for those responsible for the briefing and design stages of schemes for providing new, or adapting or extending existing health buildings. Alternative solutions and their cost implications are discussed where appropriate. Departmental Cost Allowances are based on the standards described in each HBN.

The first three HBNs in the series provide a general review of the planning of health buildings, and should be read by all those who are new to the subject.

HBN 1 "Buildings for the Health Service" describes the planning, construction and commissioning of a health building, and introduces the reader to Departmental publications on all aspects of building.

HBN 2 "The Whole Hospital" (in preparation) describes the preparation of a brief for a health building and explains how the stages of the process may be related to the mandatory requirements of Capricode.

HBN 3 "The Design of the Hospital" (in preparation) deals with the preparation of the development control plan (DCP) – the "master plan" for the hospital.

Subsequent HBNs in the series deal with individual departments and in each Note the functions, activities, equipment, environmental conditions, engineering services and dimensions which are critical to the efficient performance of an activity are identified and discussed. In these Notes it is assumed that the reader is broadly familiar with the introductory volumes.

Guidance on spaces common to all health buildings is presented in the four volumes which comprises HBN 40 "Common Activity Spaces".

HBNs are usually published with a companion Design Briefing System Notebook which considerably facilitates the project team's task of translating the guidance in the related Note into a brief for designers. The value, purpose and structure of Design Briefing System Notebooks are described in DBS 1 "An Aid to Briefing".

HBNs are prepared in consultation with representatives of the National Health Service and appropriate professional bodies.

Cover photo
The new family in the delivery room

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1 Scope of Health Building Note

Scope

1.1 This Health Building Note (HBN) deals with the hospital accommodation needs of expectant mothers, mothers and their babies. It replaces Hospital Building Note No 21, Maternity Department, which was issued in 1963, and Maternity Department in a District General Hospital, Interim Design Guidance issued in July 1973 under Dear Secretary letter 177/73.

1.2 The policy in this HBN takes into account the following reports: –

. . . The Reply to the Second Report from the Social Services Committee on Perinatal and Neonatal Mortality (issued in December 1980).

. . . Three reports of the Maternity Services Advisory Committee:

"Maternity Care in Action"

Part I – Antenatal Care (September 1982)

Part II – Care During Childbirth (Intrapartum Care) issued with DHSS letter DA(84)4 on 30 January 1984

Part III – Care of the Mother and Baby (Postnatal and Neonatal Care) issued with DHSS letter DA(85)4 in February 1985.

1.3 This guidance takes into account the latest thinking on the design of maternity departments. It is intended to facilitate good management in order to achieve a higher patient throughput, shorter length of stay and lower running costs. Every care has been taken to ensure that the guidance and recommendations for this accommodation are as economical as possible without detriment to clinical standards.

1.4 The guidance is intended for use for planning maternity departments which are attached to or form part of a district general hospital. It can also be used for peripheral antenatal clinics. The health service facilities are aimed to give all mothers a good standard of antenatal and postnatal care and a safe confinement in a congenial, fully equipped obstetric unit with good neonatal services for the new born baby readily available. The guidance in this Note is expected to cater for the majority of District requirements.

1.5 It is envisaged that consultant obstetricians, paediatricians, general practitioners, midwives and neonatal nurses will be fully involved in the planning process.

1.6 The need for fire safety and precautions and all other statutory requirements eg Health and Safety at Work Act should be considered: see Chapter 5.

Inclusions

1.7 The Note provides information on the design of the department which consists of:

a. The Maternity Outpatient Suite.

b. The Delivery Suite; including the obstetric operating suite.

c. Antenatal and postnatal wards.

d. The Neonatal Unit.

Information is also given on facilities for "rooming in" of babies with their mothers in the postnatal ward.

Exclusions

1.8 Regional Perinatal Centres – see paragraph 2.23. Education and Training – see paragraphs 5.22–5.25.

Application

1.9 For simplicity the guidance is presented as if the required accommodation will be provided by new building. However, the principles outlined are equally valid for upgrading and adaptation of existing buildings: see Chapter 5.

Cost Allowances

1.10 The cost allowances associated with this HBN are promulgated in an Annex to the Health Notice issued with the Advance Copy of the Note. The areas in the Schedules in the Cost Chapter are those used in preparing the cost allowances. They may be used as a guide in preliminary planning, but must under no circumstances be treated as a maximum or as an entitlement. This is dealt with more fully in Chapter 6.

Capricode

1.11 Capricode is the mandatory procedural framework governing the inception, planning, processing and control of individual health building schemes. The aim of Capricode is to promote a consistent and streamline approach to capital development that achieves best use of resources through the selection and construction of relevant and cost effective schemes that open on time and within budget. It identifies the main activities and provides a framework for delegation with effective management and the proper accounting for expenditure and performance. (See "Capricode Health Building Procedures" issued to Health Authorities with HN(86)32; in Wales WHC(86)62).

Design Briefing System (DBS)

1.12 The Design Briefing System is an aid to the preparation of whole hospital and departmental policies. A DBS Notebook (DBS) is published with each new Health Building Note. The format of DBS is as follows: a portion of the text of the HBN is reproduced on the left hand page,

while on the facing right hand page a sequence of options implied by the text is set out in such a way that they may easily be marked for acceptance or rejection. The use of the DBS ensures that, for example –

- in a sequence of decisions, none is overlooked;
- additional options may easily be entered, and related to existing options;
- earlier decisions are identified so that they may be easily recaptured when associated topics are under consideration;
- during refinement of the brief the implications of modifications which may affect and therefore prompt reconsideration of earlier decisions, may easily be checked;
- members of the team can review the questions next due for consideration and thus ensure that they are fully informed before the meeting: this has been found to be of great organisational and psychological benefit;
- members of the team have a clear, up-to-date record of agreed decisions which can easily be identified, as they are not embedded in a mass of minutes not of immediate relevance.

Health Building Notes published by HMSO are accompanied by the relevant DBS Notebook. Further information about DBS can be obtained from the Department of Health, Room 503, Euston Tower, 286 Euston Road, London NW1 3DN (tel: 01 388 1188 ext 3590).

Equipment

1.13 Equipment is categorised into four groups, as follows:

Group 1: items (including engineering terminal outlets) supplied and fixed within the terms of the building contract;

Group 2: items which have space and/or building construction and/or engineering service requirements and are fixed within the terms of the building contract but supplied under arrangements separate from the building contract;

Group 3: as Group 2 but supplied and fixed (or placed in position) under arrangements separate from the building contract;

Group 4: items supplied under arrangements separate from the building contract, possibly with storage implications but otherwise having no effect on space or engineering service requirements.

The Equipment Cost Allowance Guide (ECAG) provides a sum of money for the functional unit for groups 2, 3 and 4.

2 General Service Considerations

Purpose and Objectives of the Service

2.1 The main objective of the service is to secure the safety of childbirth for both mother and child, and to provide for their care in a pleasant environment. The aim is to:

- promote good physical and mental health;
- ensure, so far as possible, the birth of a mature, live healthy infant;
- prepare the mother for labour, delivery and for the care and feeding of her child;
- detect and treat all conditions which may endanger or affect the future health of the mother and baby;
- cope with all emergencies that may arise during the antenatal, labour and postnatal period;
- try to ensure that the birth of the baby is as emotionally satisfying as possible for the mother; and also a pleasurable experience for the father and family.

2.2 Close co-operation and co-ordination of primary care and specialist services are an essential feature of good maternity care. The accommodation for mothers and babies should provide facilities for a comprehensive hospital service, closely linked with primary care carried out in the woman's own home, general practitioner surgery, health centre or other community clinics. Close multi-disciplinary co-operation involving doctors, midwives, health visitors and social workers is important in ensuring as satisfactory an outcome as possible to the pregnancy.

2.3 It is envisaged that the father or a relative or friend may be present during antenatal care, parentcraft sessions, and during the labour and delivery of the baby. There will also be frequent visitors to the antenatal and postnatal wards and the neonatal unit. Children will accompany mothers to the outpatient suite and visit the wards and nurseries.

The Maternity Department: its location in relation to other parts of the DGH

2.4 There are many advantages, such as accessibility of diagnostic and treatment facilities and services like catering and supplies, in integrating the maternity department into the body of the DGH.

2.5 Where a maternity department is being added to an existing hospital, integration may be unrealisable, but even so, every attempt should be made to locate the wards to maximise flexibility in use. In an integrated department, it is the interior design and furnishing that will most effectively proclaim that the women are not sick.

2.6 Maternity wards (both antenatal and postnatal) have in the past often had low occupancy, due to variations in birthrate and reduction in length of stay. If they are sited so that some of them could be transferred for use by gynaecological or other medical or surgical specialities, a much higher degree of longterm overall utilisation can be achieved.

2.7 The maternity department needs to be located within easy access of the main diagnostic areas of the District, especially the radiological services, pharmacy, pathology, and anaesthetic services. The maternity department should also be within easy access of the paediatric unit and the social work services department. See Diagrams 1 and 2.

Service Planning

2.8 Over 98% of births now take place in hospital. Planning of the District Maternity Services should therefore provide for all women who may wish to be delivered in a fully equipped DGH offering the full range of maternity services. In these maternity units in-patient beds and delivery suites should be available subject to local agreement, to women in the care of general practitioners, midwives and consultant obstetric staff.

The District planning of maternity provision should take into account local factors and be based upon a statistical analysis of needs.

Maternity Outpatient Suite

2.9 Planners are encouraged to refer to paragraphs 1.3 to 1.9 and 1.11 of the Maternity Services Advisory Committee's first report, Antenatal Care, which highlights the importance of assessing carefully what is required in the Outpatient Suite.

2.10 The size of the outpatient suite will depend on the population served, the number of expected attendances and the number of doctor, midwife and parentcraft teaching sessions. In addition to antenatal sessions, and facilities for postnatal, family planning, and special obstetric services (eg for pregnant cardiac and diabetic patients), accommodation is also required for the social worker and the dietitian and, depending on local circumstances, an interpreter. Local operational policies may dictate the need for facilities for dentists and chiropodists (generally in the main outpatient department). All of these should be available to advise pregnant women about their needs.

Delivery Suite Accommodation

2.11 Chapter 8 of the Maternity Services Advisory Committee's second report (Care During Childbirth) is relevant to the delivery suite accommodation.

DIAGRAM 1

MATERNITY DEPARTMENT

Relationships with other departments and main relationships within the department

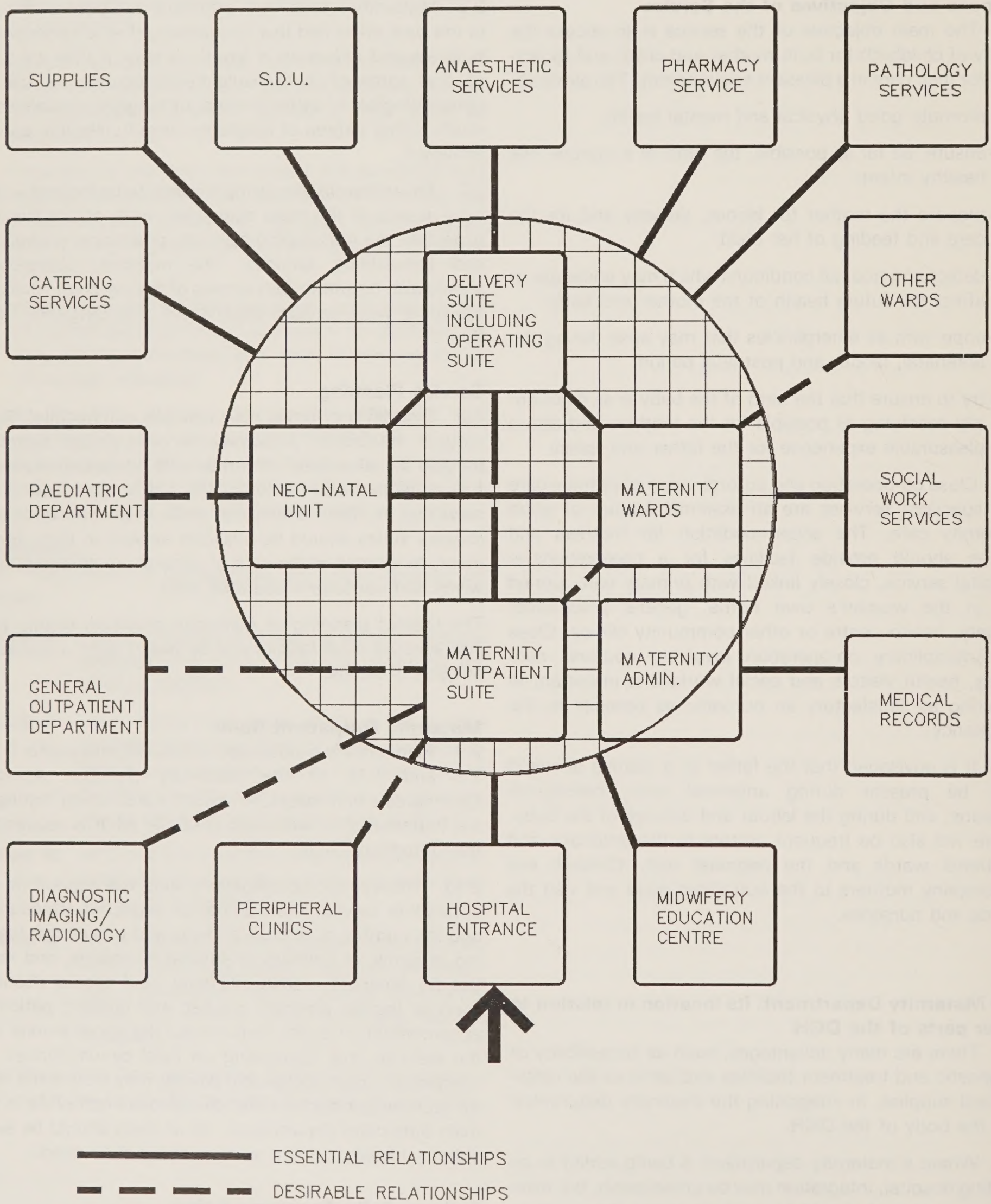
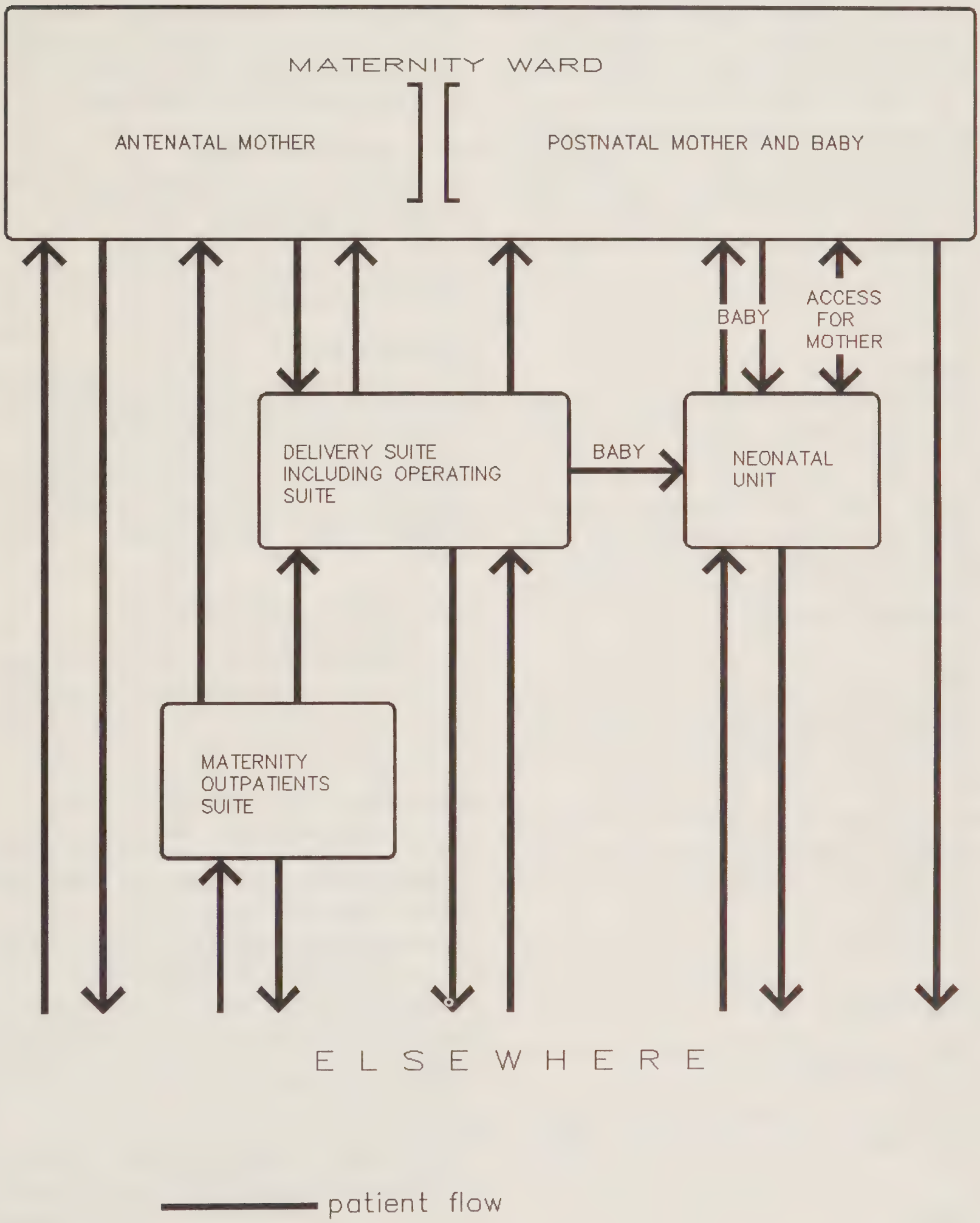


DIAGRAM 2 MATERNITY DEPARTMENT

Patient flow: this diagram illustrates activities and is not intended to represent spaces



2.12 Adequate delivery suite facilities are of prime importance, and it is essential to provide sufficient facilities to meet the clinical demand. As it is not always possible to foresee which labours will become abnormal, all delivery rooms must be designed so that it is possible to deal swiftly and expeditiously with emergencies at any stage of labour or the early puerperium. Women should, in general, as far as possible remain in the same room throughout all stages of their labour. After the delivery they should be transferred to postnatal accommodation or to their homes.

2.13 The length of time spent by the women in the delivery room depends not only on the length of labour but also on factors such as induction policy, occurrences of complicated labour, and the need for observation of mothers recovering from an operative procedure. Other factors that will influence bed occupancy are the availability of staff to move the women and domestic staff to clean rooms between deliveries etc. On the assumption that an average of 24 hours per patient in a delivery room is required, because a delivery bed must always be available and the admission of patients in labour occurs irregularly, a 75% occupancy rate should be used to assess the number of rooms to be provided for the predicted number of births.

Abnormal Delivery Suite

2.14 It must be possible to perform operative obstetric procedures including Caesarean sections in the delivery suite. There are several ways the facilities may be provided. One common method is for there to be two abnormal delivery rooms, both equipped as obstetric theatres, one normally set up for vaginal deliveries on the obstetric bed, the other set up for abdominal deliveries on an operating table. See paragraphs 3.63, 3.64 and Appendix 2: Ergonomic drawings.

Inpatient Beds

2.15 Future bed needs are difficult to predict because of a number of variable factors. As general indicators, planning teams are given the following factors for guidance in assessing the estimated number of beds needed:

a. the estimated number of women of child-bearing years in the District served by the department: this is only a rough indicator due to trends in family planning and sterilisation;

b. the local birth rate;

c. the average length of stay – local factors should be considered carefully;

d. the realistic percentage bed occupancy to be aimed for – this is about 75%.

It must be stressed that each health authority needs to reach its own decision on the number of beds required locally.

Neonatal Units

2.16 The guidance in paragraphs 2.17 to 2.22 takes account of the advice on good practice in the care of the newborn, which is given in Chapter 4 of the Maternity Services Advisory Committee's third report "Care of the Mother and Baby" (issued with letter DA(85)4 dated February 1985). Planners are encouraged to study that Chapter in relation to neonatal units.

Terminology

2.17 The following advice is given in the Foreword of the Maternity Services Advisory Committee's third report: –

> "The term 'Special Care Baby Unit' which suggests a concentration of special care in one place is no longer apt. We should like to see it phased out and replaced by the term 'Neonatal Unit' to describe the unit giving such special baby care as cannot be provided in the postnatal area, as well as intensive neonatal care. The amount of intensive care provided will vary between units but even the smallest consultant unit must be expected to provide a measure of intensive care to sustain the baby at least until he can be transferred elsewhere."

Care of the Newborn Baby

2.18 The main philosophy of care is that the baby should be cared for alongside the mother, unless this is incompatible with their medical needs.

In assessing facilities for the newborn infants the following need to be considered: –

The Healthy Baby

2.19 Newborn babies will be nursed in cots alongside the mother, where general maternal care and certain medical and nursing procedures will be carried out.

2.20 A room in the postnatal area of the ward should be suitable for the temporary care of a baby, including any examination, care or treatment which it is inappropriate to carry out at the bedside.

Babies Needing Additional Care

2.21 Healthy pre-term and immature babies, those born by assisted and operative procedures, and babies transferred from the neonatal unit (see paragraph 2.22), should be cared for alongside their mothers in a designated multi-bedded or single room in the postnatal ward.

Neonatal Units for Small and Ill Babies

2.22 An area within the DGH maternity department should be designated for neonatal intensive care and/or for special care for those babies not able to be cared for alongside their mothers.

Most DGHs will be expected to provide a measure of intensive care as facilities and expertise develop outwards from the Regional Perinatal Centres. If a maternity department has no long-term intensive care facilities, certain babies will need to be transferred to Regional Perinatal Centres or other specialised units.

Exclusions

2.23 Guidance on specialist centres, such as the designated Regional Perinatal Centre, is not included in this Building Note. Advice on those centres is given in paragraphs 4.4 to 4.11 of the Maternity Services Advisory Committee's third report.

Neonatal surgical facilities will be required at or adjacent to the Regional Perinatal Centre. Exceptionally the baby may be transferred to a designated supra-regional centre.

Functional Units

2.24 These comprise:

a. for Maternity Outpatient suite – the consulting and examination room.

b. for the wards, the bed and associated cot space.

c. for delivery suite (including operating suite) – delivery room.

d. for Neonatal Unit – cot space.

Characteristics of Maternity Care affecting Function and Design

2.25 Childbirth is usually a natural physiological event but complications can occur at any stage. A woman may experience a variety of emotions – gladness, pride, fear or apprehension; she needs family support, reassurance and guidance from all those involved in her care.

The Maternity Outpatient Suite

2.26 Clinics should be designed to avoid overcrowding. Wherever possible, the environment should contribute to a quiet, relaxed atmosphere that will maintain the woman's confidence and dignity. The father, other children and friends will accompany her and suitable accommodation for them should be provided.

The Delivery Suite

2.27 Labour and delivery may be normal or abnormal and the mother ambulant or in bed; her labour may need to be monitored using specialised equipment. In most instances the father, a relative or a friend will be present. As obstetric emergencies can occur without warning, immediate access to facilities, and staff to deal with those emergencies, must be available.

Wards

Antenatal Ward

2.28 Mothers who develop complications during pregnancy or have existing medical conditions will need extra care, and admission to hospital may be necessary. Mothers admitted early in pregnancy should come to a ward in the maternity department. This guidance assumes that provision will be made elsewhere in the hospital for early pregnancies to be terminated, although mothers requiring late termination of pregnancy may need suitable accommodation in the maternity department.

Some high risk mothers may be admitted for many weeks, most mothers admitted may be anxious or depressed but many do not feel ill. The ward environment should be suitable for mothers to be up and about, the design should not inflict undue restrictions on the mother and should be welcoming to fathers, children and other family members. Adequate single rooms for high dependancy care and day rooms for various activities should be available.

Postnatal Ward

2.29 A quiet, calm but reassuring atmosphere is required in the postnatal ward to enable the mother to rest following the birth, and get to know her new baby. New mothers require a great deal of support and the design should ensure that there is easy visual contact with staff.

Neonatal Unit

2.30 The neonatal unit should be close to the delivery suite so that ill babies can be transferred quickly and easily. Postnatal mothers should have unrestricted access to the neonatal unit and the baby's family welcomed into it.

Control of Infection

2.31 Regard must be had to the District policy for the care of mothers and babies requiring source and protective isolation. No arrangements for such isolation have been incorporated in the Building Note.

2.32 It is expected that sufficient rooms with ensuite sanitary facilities will be provided in the delivery suite and the antenatal/postnatal ward accommodation for segregation and care of potentially/actually infected mothers, with or without their babies beside them.

2.33 Prevention of infection involves the consideration of the neonatal unit's design. It is important that there is adequate space within that unit to avoid overcrowding. Smooth surfaces with coved junctions and avoidance of dust traps help to prevent infection and are easy to keep clean.

3 Specific Function and Design Requirements

Introduction

3.1 This Chapter enlarges upon the service objectives in Chapter 2 and the environmental considerations etc in Chapter 5. The Chapter comprises specific functional and design requirements for: —

- the maternity outpatient suite
- the delivery suite, including the obstetric operating suite
- the antenatal and postnatal wards
- the neonatal unit.

Maternity Outpatient Suite (See Diagrams 3 and 4)

Overall Needs

3.2 The suite provides a consultative service for investigation, diagnosis and treatment. Most women are referred to that service by their general practitioner, for the initial booking and arrangements for their future care. Attendance at a maternity outpatient suite is often a person's first introduction to a hospital or community health centre and a pleasant, well designed and decorated building, devoid of an institutional atmosphere will contribute to confidence and allay fears.

3.3 Facilities may be required to meet the needs of the following services: —

- antenatal
- ultrasound
- postnatal
- midwives' sessions including community midwives sessions (where appropriate)
- general practitioner sessions
- family planning
- special obstetric sessions ie for cardiac and diabetic patients
- infant follow-up
- parentcraft and health education
- dental examination, chiropody and diatetics (where appropriate)
- social work

3.4 The size of the suite depends upon the total number of attendances and the time which each consultation takes and this varies where antenatal care is undertaken by general practitioners in their own surgeries, or in health centres or carried out by midwives either in the mother's home or elsewhere. The number of attendances at individual sessions will also vary substantially. The suite should be designed to accommodate the average number of women expected at the sessions for which the consultant obstetrician is responsible, because these are the sessions with the largest number of attendances. It should enable the sessions to be held without overcrowding, with ease of circulation and with regard to the privacy of the mother. Care should be taken that any examination, which may be a source of embarrassment to the mother, is conducted in circumstances that ensure her privacy and psychological well-being.

Planning Considerations

3.5 The Maternity outpatient suite should be designed so that it has an identity of its own and can function independently from the general hospital outpatients department.

The suite should be on the ground floor and be well signposted. It should be within easy reach of the delivery suite and the maternity wards. The relationship to other hospital departments must be carefully considered, of particular importance are the Social Work Services Department, the Radiodiagnostic Department, where many women may go for their ultrasound examinations, the Pharmacy and the Pathology Department. Both the forward and reverse routes should be clearly marked.

Assessment of Need (see paragraph 2.10)

3.6 The functional unit for the basic accommodation is the consulting and examination room. Space provision should be assessed on the assumption that there will be an efficient appointment system and the mother does not have to wait too long.

Design and Functional Requirements

3.7 **Entrance, Reception, Current Records**

In most cases entry to the hospital will be by the main entrance. A proliferation of entrances is uneconomic and causes security problems. The entrance to the suite should be designed to provide a welcoming, non-clinical environment, and located to provide easy access from the point of arrival at the hospital. If the maternity department, or maternity outpatient suite, is a separate building added to a hospital site, it may be necessary to provide its own external entrance. In this case, provision of automatic doors will assist the access of disabled people in wheelchairs and also mothers, often with children. A method of reducing the amount of dirt carried by footwear into the department should be incorporated into the design of the lobby.

It may be necessary to provide a pushchair/pram parking area, with security lock-up devices. If possible it should be in view of the waiting area.

3.8 The reception counter should be in a prominent position near the entrance, overlooking the main waiting

DIAGRAM 3

MATERNITY DEPARTMENT OUTPATIENTS SUITE

Relationships within the suite: flow lines indicate the main relationships but do not signify their degree of importance

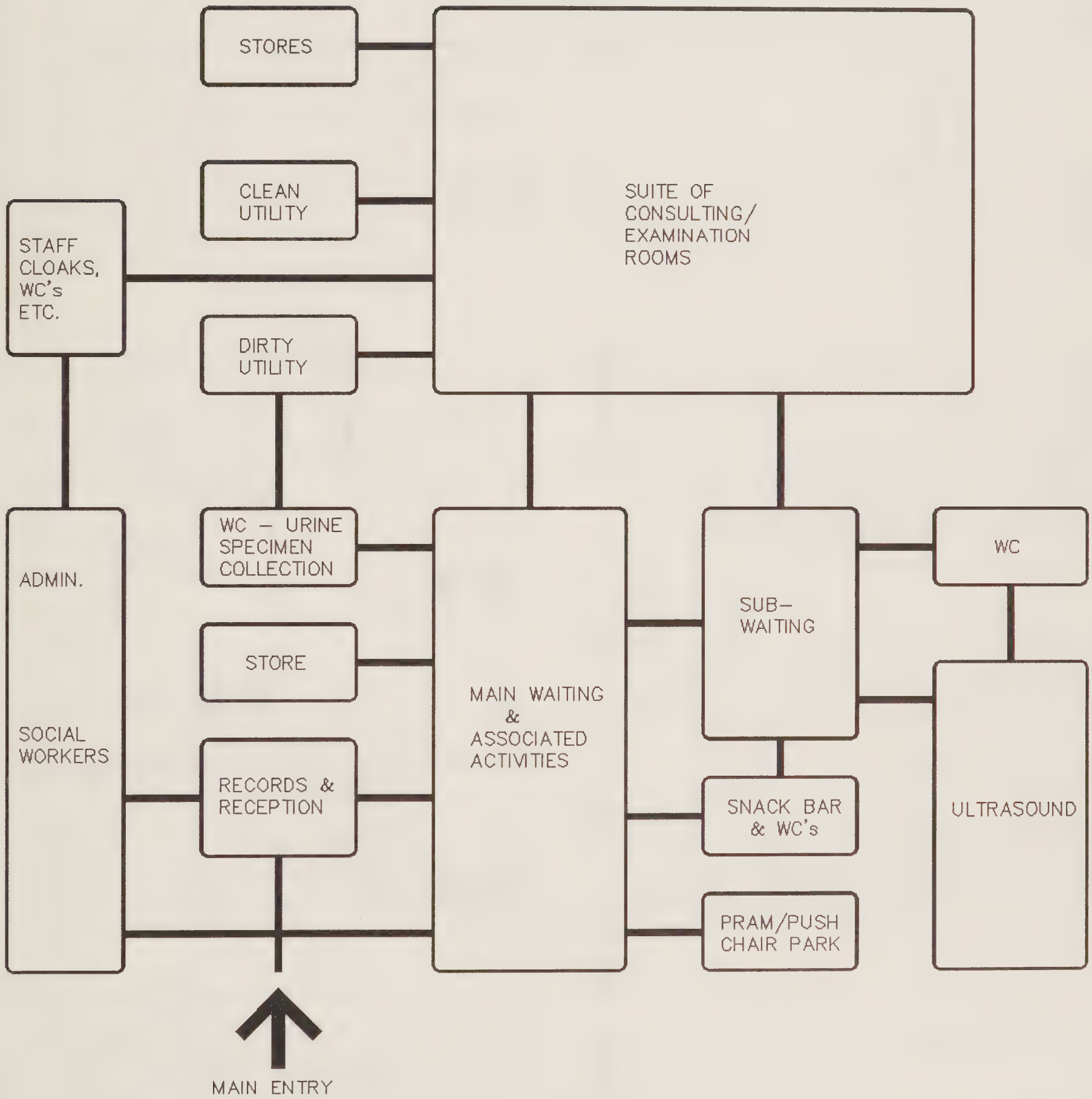
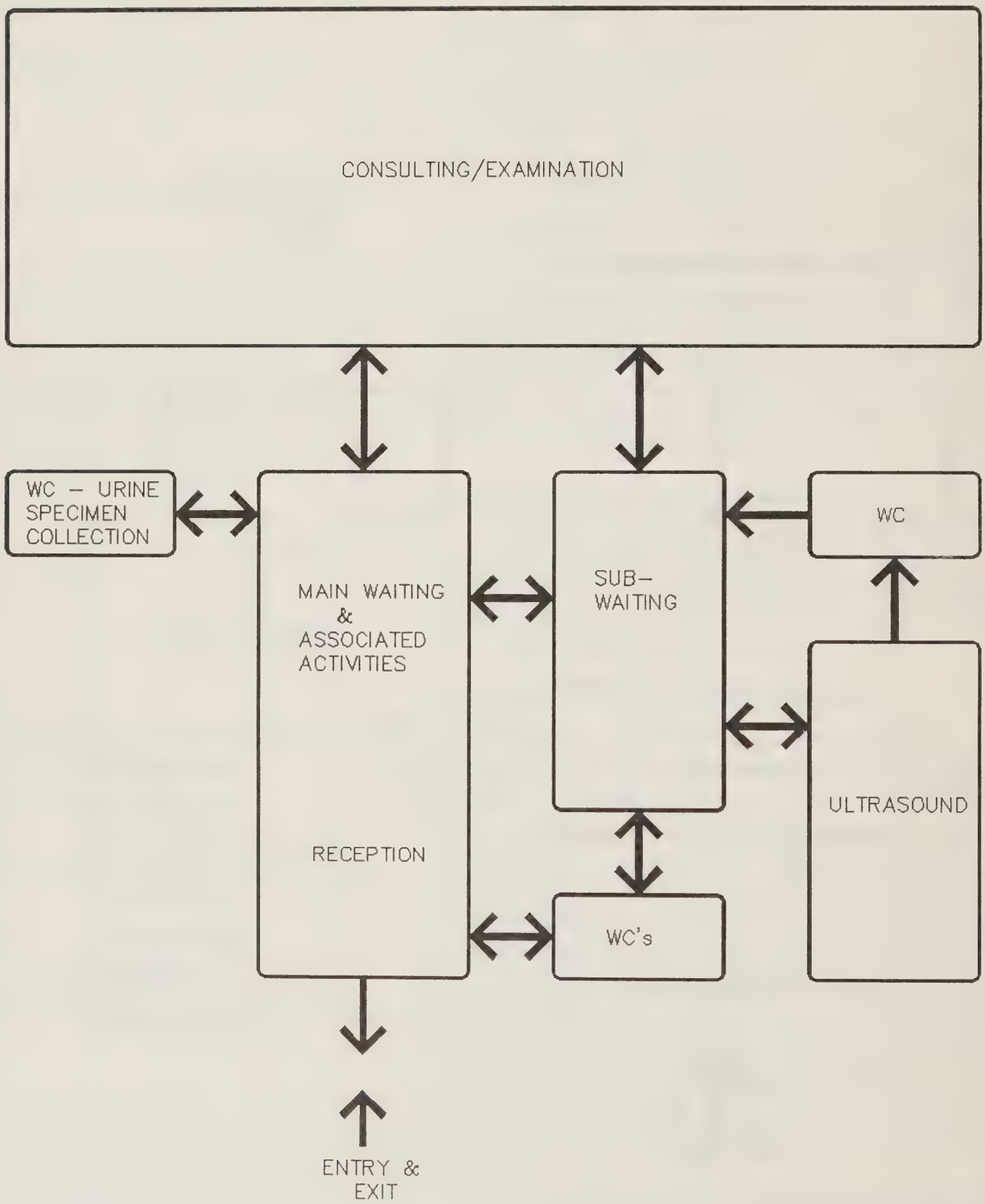


DIAGRAM 4

MATERNITY DEPARTMENT OUTPATIENTS SUITE

Patient flow: this diagram illustrates activities and is not intended to represent spaces



area. The counter needs to be stepped down at one end so that a wheelchair patient/visitor can easily see and speak to the receptionist. The counter requires sufficient working space for each receptionist who will welcome the mother, obtain/collect records, deal with appointments and transport facilities. A convenient arrangement is for the reception counter to form part of the maternity current records and office accommodation. Current records must be readily available and accessible day and night; mobile fire resistant filing cabinets may be necessary so that the records can be transferred to the delivery suite when the outpatient suite is closed. Records other than those in current use will be stored in the records department of the hospital.

A computer terminal and associated equipment should be located at the reception counter – see paragraph 5.42.

Waiting Space

3.9 The waiting space should have a pleasant and informal atmosphere. Many expectant mothers will be accompanied by a friend or relative and may have their small children with them.

The waiting space should be planned so that it can be subdivided into a main waiting space and subwaiting spaces near groups of consulting examination rooms, and space for other purposes. Smoking should not be allowed in this area.

3.10 Facilities should be available for:

Young children to play under supervision.

Health education which will include parentcraft and relaxation classes, the showing of films and videos.

Demonstrations given by voluntary and non-medical/nursing organisations which help to create the non-clinical atmosphere and lend interest to the visit.

Lectures and meetings for staff.

Public telephones and drinking water should be available.

Sanitary Facilities

3.11 WC facilities (including provision for hand washing) should be located centrally and convenient for the main waiting area, consulting/examination rooms and the ultrasound room. Two specimen collecting WCs, one with wheelchair access, should be provided adjacent to the room where the testing of specimens of urine takes place; they should have communicating hatches. A single WC and washhand basin ensuite will be required for male visitors if no such toilet serving other departments is nearby.

Consulting and Examination Rooms

3.12 This guidance assumes that the complete antenatal visit ie changing, weighing, blood pressure recording, history taking, consultation, examination and venepuncture etc will take place in one room.

3.13 Wherever practicable a general purpose consulting and examination suite (C/E room) should be used because of greater flexibility. The combined C/E room should be large enough to have undressing and dressing facilities for the mother, preferably in the space round a couch screened off by a curtain, and space for clinical procedures and electronic monitoring/diagnostic equipment. The room should have adequate space for easy movement around it by mothers, escorts, staff, trolleys and equipment.

3.14 It is important for staff to have easy access to groups of C/E rooms. Staff should not, however, use the C/E rooms as a walkway. The conversations which take place in these rooms are often of a very personal nature. In addition women often require vaginal examination within these rooms and even if the examination couch is screened off there is insufficient privacy for such examinations to be conducted if people are walking through the room. Adequate sound attenuation is required together with an "engaged" indicator on the door. The rooms should not be curtained cubicles. A handwash basin is essential; so is an adjustable lamp serving the couch. A small cupboard, with a worktop/writing surface, for the storage of items of equipment and sterile packs is desirable.

Parentcraft Room

3.15 It will be necessary to provide a room for parentcraft teaching sessions if the waiting areas are fully occupied during clinic sessions. In this area, the parentcraft store (paragraph 3.22) may be located within or adjacent to the parentcraft room.

Clean Utility Room

3.16 The clean utility room will be used for storing clean/sterile supplies and preparing trolleys for use in the C/E rooms and treatment room. Lockable cupboards with worktops are required for storing lotions and drugs. There should be space for parking surgical dressing trolleys. The entrance to the room must be under the observation of the staff and the door must have a large viewing panel. Drinking water and clinical hand washing basin should be provided.

Dirty Utility Room

3.17 A dirty utility room is required for the disposal and cleaning of clinical equipment used in the suite. Facilities are required for the disposal of liquid waste, the cleaning of dressing trolleys and the temporary holding of materials requiring reprocessing or disposal. Some shelves for limited storage are required. Facilities for urine testing should be provided within the dirty utility room. The two specimen collecting WCs should have hatches through to the test area. For patients who bring specimens with them the room should have a horizontally divided door with a counter top or a hatch to the corridor, or a table where the women can put their urine specimens.

Offices

3.18 Offices will be required for: –

i. the medical staff, including general practitioners;

ii. the midwife in charge;

iii. all other staff – community primary health care personnel, eg community midwife, health visitor, an interpreter depending on local circumstances, also medical social worker and dietitian etc. Offices for these personnel which may be shared should be provided as required.

Parentcraft room: The physiotherapist and midwife talking to mothers about labour

Each room should contain a desk, telephone, stacking and easy chairs, bookcase and a cupboard. Sound attenuation sufficient to prevent conversation being overheard, is essential. It is also important to have as much natural daylight as possible.

Seminar/Staff Room

3.19 A room suitable for medical and midwifery staff to hold discussions and informal teaching sessions is required. The room may also be used for coffee and tea breaks if it is not practicable to send staff to the main staff dining room. It may be possible to share the use of the seminar/staff room in another part of the Maternity Department (see paragraph 3.56) or the main Outpatients Department.

Cleaners' Room

3.20 A well ventilated secure room is required with provision for the storage and daily maintenance of mechanical cleaning equipment and the storage of cleaning materials. Coat hanging and small lockers may be required. (See HBN 40 "Common Activity Spaces" Volume 1).

Storage

Equipment Store

3.21 A general purpose store sited near the C/E rooms is required for items to be stored on shelves eg disposables, hardware, stationery etc. In addition there should be room to house mobile equipment eg wheelchair, monitoring devices, paper covers for C/E couches etc.

Parentcraft Store

3.22 A store is required for the storage of "biscuit" mattresses, equipment, teaching aids and relevant stationery used for relaxation, parentcraft and health education classes.

The door should be lockable for safe-keeping of the valuable teaching aids. The room should be adjacent to the space where parentcraft is carried out.

Linen Store

3.23 A linen store is required.

Disposal Room

3.24 Facilities are needed adjacent to the entrance to the suite for holding (prior to collection) colour coded bagged items for disposal or reprocessing including refuse; also soiled linen and Sterilizing and Disinfecting Unit returns.

Switch Room

3.25 This is required to accommodate the electrical installation control equipment. The room should be kept dry and well ventilated with a door that is lockable and opens outwards. If, however, an electricity supply of adequate capacity is conveniently available from an existing switchroom then secure sub-distribution switchgear cupboards will suffice.

Essential Complementary Accommodation

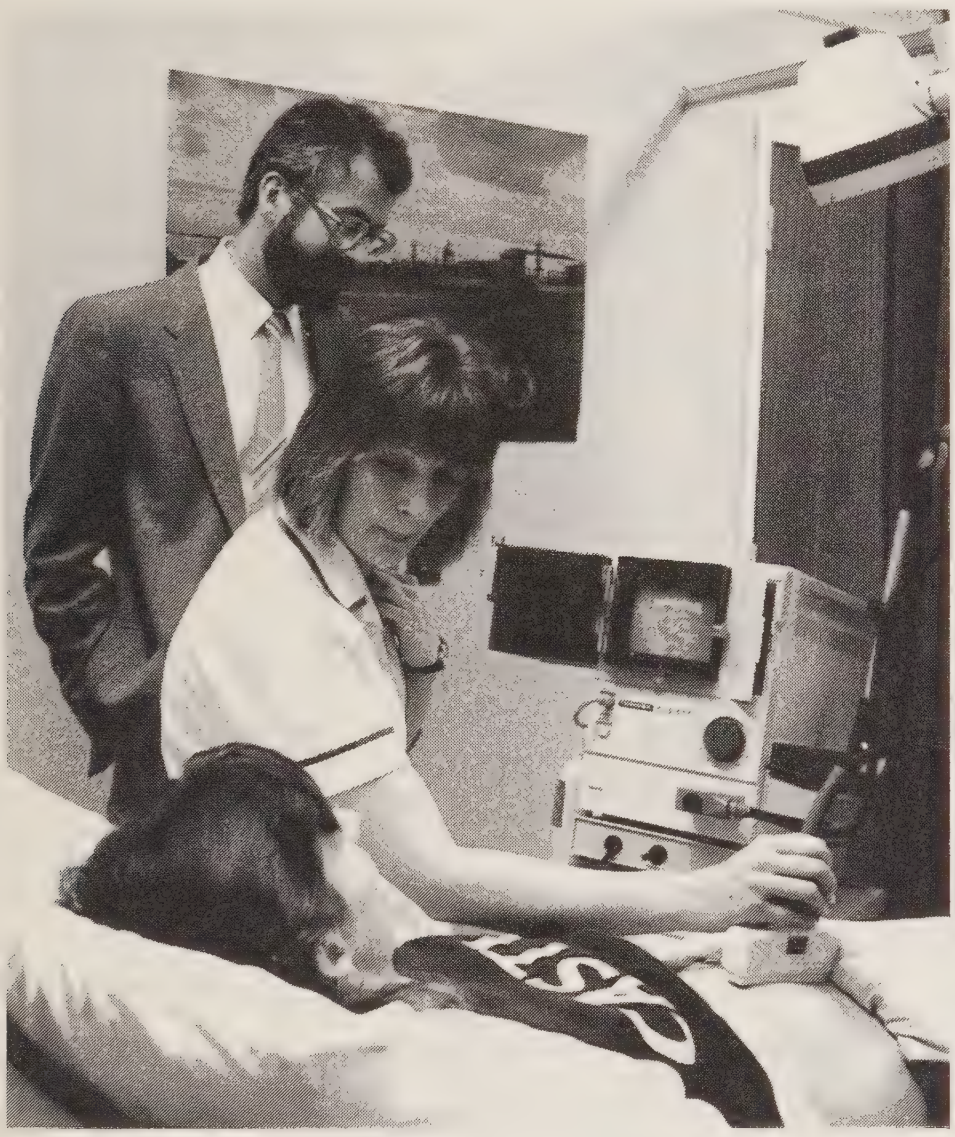
Ultrasound Room

3.26 Many women have an ultrasound examination as a part of their antenatal care. If diagnostic ultrasound facilities are not provided in conveniently nearby accommodation, they will be required in the maternity outpatient suite. Some women will require surgical procedures such as amniocentesis under ultrasonic control. Adequate space should be provided for the movement of trolleys.

The use of ultrasound does not require radiation protection. A washbasin and drinking water supply should be provided and there should be facilities for darkening the room.

It is often helpful if pregnant women undergoing ultrasound examinations have a full bladder, so toilet (WC) facilities should be available nearby for use immediately after the examination.

The ultrasound room should have an associated changing area and subwaiting space.



Ultrasound examination; Explaining the scan

Venepuncture Room

3.27 If venepuncture is not carried out in the C/E room or treatment room, a separate room should be provided for this purpose. (See also paragraph 3.12).

Snack Bar

3.28 A tea bar to supply beverages and light refreshments should be provided adjoining or within the main waiting area, unless such facilities are easily accessible elsewhere. Where this is to be run by a voluntary organisation it will be necessary to have a small storage room ensuite.

Optional or Shared Accommodation

Note: The rooms in paragraphs 3.29 and 3.30 are either optional or shared accommodation, depending on local policy. A costing for each of these rooms is available.

Treatment Room

3.29 A treatment room may be required for diagnostic and clinical procedures which may include specimen collecting and cardiotocography. A couch and two chairs will be needed and the facilities will include a clinical hand washing basin and an adjustable examination lamp. A storage cupboard with a worktop over can provide a writing surface. Adequate space is required for mobile surgical trolleys, monitoring and diagnostic equipment and machines.

Staff Changing

3.30 Secure coat and cloak-hanging facilities and individual handbag lockers may be required. Two rooms should be provided: one for female staff and one for male staff. WCs, hand washing and grooming facilities should be provided, ensuite or adjacent to the cloakrooms. (See HBN 41, "Accommodation for Staff Changing and Storage of Uniforms" for options on local or centralised changing accommodation).

The Delivery Suite (See Diagrams 5 and 6)

Purpose

3.31 The delivery suite should provide sufficient accommodation to allow for all mothers in the hospital's catchment area – whether the responsibility of the consultant obstetrician or the general practitioner obstetrician – who wish to be delivered in hospital. As indicated in paragraph 2.8, over 98 per cent of births now take place in hospital.

Facilities will be required for: –

- the admission and reception of the mothers
- uncomplicated labour and deliveries
- complicated, abnormal and operative obstetric procedures
- minor obstetric procedures
- resuscitation of the baby
- observation and recovery of mothers
- fathers, relatives and friends
- medical, midwifery, nursing and other staff
- the clinical training of midwifery, nursing and medical staff.

3.32 The objectives of care in labour are to reduce the risks to mother and fetus, to provide comfort and a sense of well-being and satisfaction to the mother, and to achieve the birth of a healthy baby. It must also be remembered that the safety of the mother and baby can be achieved only by constant care and supervision. Accordingly the delivery suite is staffed as an intensive care unit.

3.33 The aim of this building guidance is therefore to try to provide a safe environment in accommodation that is designed and fitted out, so far as possible, like a home or hotel.

Assessment of Need

3.34 The number of labour/delivery rooms and abnormal/operating rooms should be estimated on the average daily number of births, taking into account "peak" periods and the anticipated number of Caesarean sections and obstetric operations which require operating theatre conditions.

DIAGRAM 5

MATERNITY DEPARTMENT DELIVERY SUITE

Main relationships within the sub-department: flow lines indicate the main relationships but do not signify their degree of importance

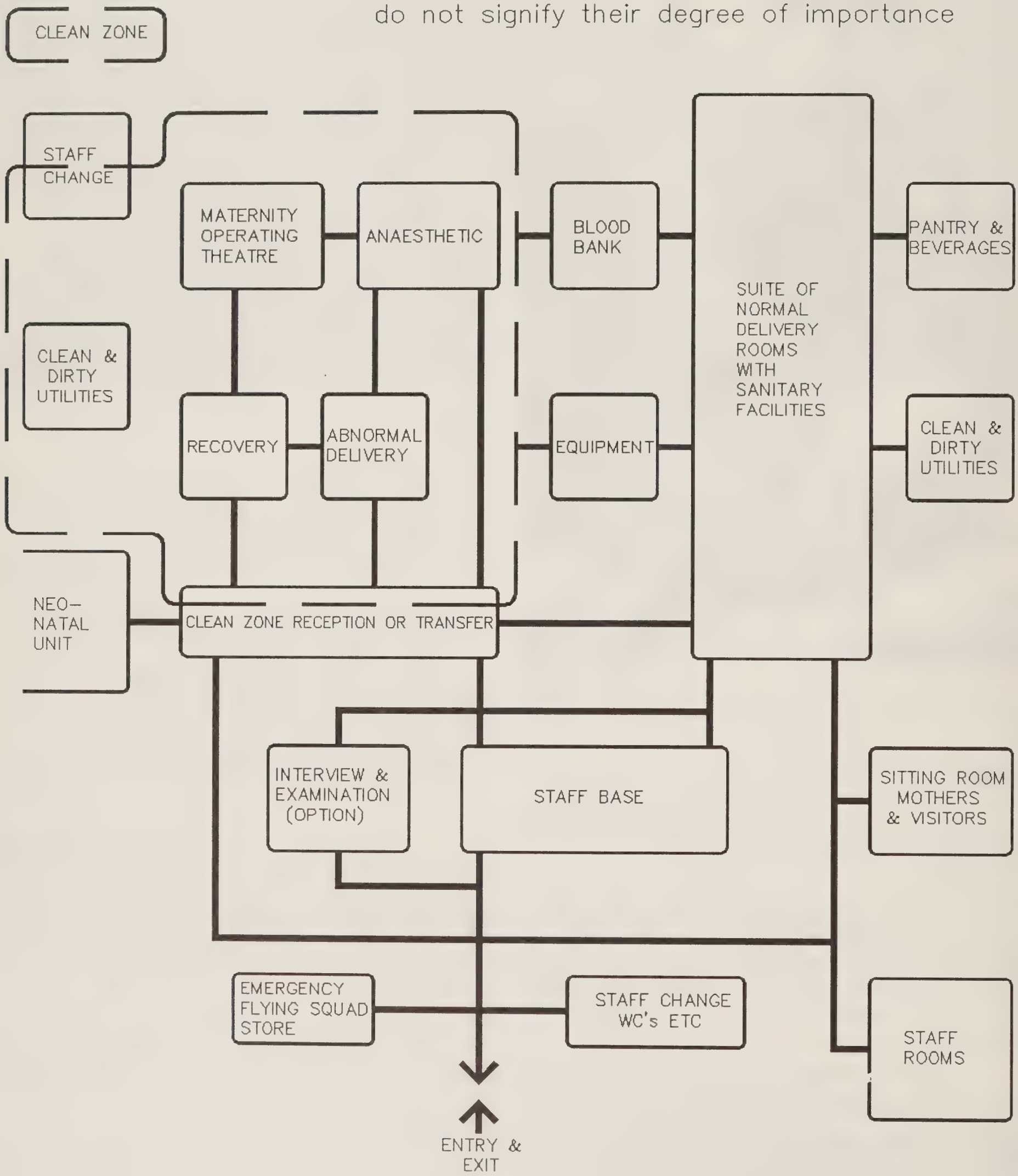
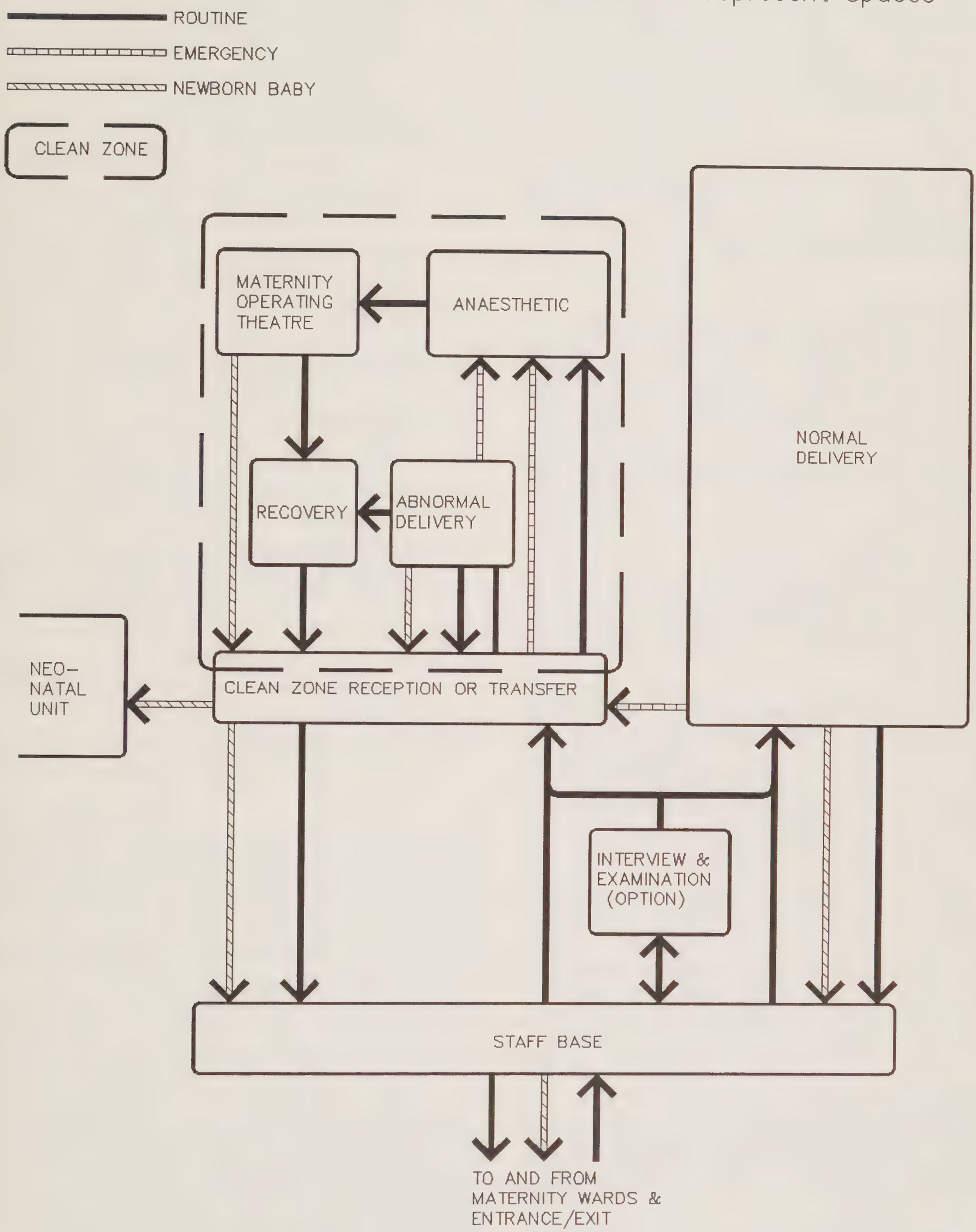


DIAGRAM 6

MATERNITY DEPARTMENT DELIVERY SUITE

Patient flow: this diagram illustrates activities and is not intended to represent spaces



Siting

3.35 The delivery suite should be easily accessible from the hospital entrance. If the maternity department is planned on more than one floor, the delivery suite should be on the same floor and adjacent to the neonatal unit so that the transportation time of ill babies is kept to a minimum.

The antenatal and postnatal wards, the delivery suite and maternity outpatient suite should be conveniently accessible from one another. For economies in design and maintenance it is wise to concentrate facilities requiring similar structural and engineering systems. The hospital's operating and paediatric departments should be nearby for ease of access by anaesthetic and paediatric staff.

Layout of Suite, Adaptability and Grouping of Areas

3.36 The layout of the delivery suite should be from the interview/examination room to delivery rooms, to obstetric theatre and recovery areas.

Rooms and spaces

3.37 The planning team should aim to achieve the optimum use of space without detriment to the needs of mothers and staff, and to the efficient functioning of the spaces involved. The critical dimensions which define the space required by staff when conducting uncomplicated, complicated and operative deliveries are of vital importance and must not be eroded. (See Appendix 2 ergonomic drawings).

Entrance and Foyer

3.38 The entrance should be clearly signposted. Automatic doors should be provided and, immediately within, a bell push should be sited so that mothers and visitors can summon the staff. Parking for a trolley and wheelchairs is required.

3.39 There should be a general sitting room area for mothers and visitors within the delivery suite with access to toilets and telephones and refreshment facilities. Smoking should be discouraged but if space and resources permit there should be an additional separate sitting room for smokers. Sitting rooms should have windows. The decor should be light and domestic.

3.40 Shelves for magazines, display panels where notices and paintings or drawings done by children in the children's ward or local school can be displayed, should be provided. Works of art in the form of original paintings or prints should decorate the walls. Carpeting should be provided in all the day/sitting rooms, staff rooms and circulation areas in the general part of the suite.

Delivery Rooms

3.41 Planners' attention is drawn to paragraphs 8.5 to 8.7 in Chapter 8 of the Maternity Services Advisory Committee's second report "Maternity Care in Action – Care During Childbirth".

3.42 Most deliveries other than Caesarean sections will take place in these rooms. They will be used for all stages of labour including recovery following delivery. Transfer to the obstetric theatre should be easily achieved.

3.43 The majority of the mothers will be admitted directly to a delivery room and they may be walking, in a wheelchair, on a trolley or a hospital bed. The room should be designed in as homely a manner as possible and furniture and furnishings should be of a domestic nature.

3.44 The delivery rooms should by reason of their size and ergonomic layout be suitable for all the following:—

i. a delivery on a domestic type bed with the infants' cot and resuscitation equipment nearby. Adequate space and furniture at the bedside for the mother's partner is required. Three staff may be present in this area.

ii. an operative vaginal delivery with the mother in the lithotomy position under local, general or epidural anaesthesia with obstetric, anaesthetic and paediatric medical and midwifery staff in attendance, ie up to 6 personnel. There should be adequate space at the bedhead for administration of a general anaesthetic and any procedures necessary for the maintenance of a clear airway.

iii. the insertion and induction and maintenance of epidural anaesthesia during labour.

iv. space is required for maternal and fetal monitoring machines, intravenous therapy, or ultrasonic aids when in use. This equipment will be stored elsewhere and brought into the room as and when needed. (See paragraph 3.58a).

v. one or more rooms should contain furniture and equipment suitable for deliveries in the "birthing chair", squatting position etc. Bean bags are also useful to help the patient relax.

vi. mechanical ventilation to control the level of waste anaesthetic gas pollution will be required (see paragraphs 4.35 and 4.36).

vii. a sink with two lever-action taps is required for staff to scrub up before obstetric and clinical procedures.

3.45 The doors to the room should be wide enough for a bed with attachments to pass through. If a viewing panel is provided in the door, the privacy control must be within the room.

3.46 The following facilities should also be provided:—

—a cupboard with a worktop over;

—at the head of the bed, a bedhead unit with patient-to-nurse and nurse-to-nurse call systems, radio with earphones and bedhead light with dimming facility;

—four switched electric socket outlets near the bedhead, piped oxygen, nitrous oxide, medical vacuum and $N_2O + O_2$ (nitrous oxide and oxygen), anaesthetic gas scavenging terminal;

—in the area designated for the baby, two socket outlets, also piped oxygen and medical compressed air and vacuum outlets;

—supplementary heating for the baby;

— adequate local lighting should be provided together with an appropriate examination lamp which must be automatically battery maintained;

— a television aerial point and a telephone outlet.

All rooms should have windows with attractive curtains and should be quiet and restful.

3.47 One of the rooms should be suitable for the care of a patient who requires long term intensive supervision in surroundings which may need to be darkened and free from external noise.

Patients' Sanitary Facilities

3.48 For each pair of delivery rooms a WC, bidet, shower and/or bath and small utility area should be provided. (See also paragraph 3.79).

3.49 If sited between the rooms or ensuite with the rooms, the mother and visitor can have easy access without going into the general circulation area. The utility area should have a sink and drainer for the collection and examination of the products of conception and a set of scales for weighing the placenta. Colour coded disposal bags for the bagging of waste materials should also be kept there. By providing this area, the midwife can remain in close proximity to the mother and baby, and does not have to leave them to go to the central dirty utility room.

Patients' and Visitors' Sitting Room

3.50 This should be conveniently located for easy access by the mothers and supervision by the midwifery staff and sited near to the beverage room. The decor should be completely domestic with a variety of easy and semi-easy chairs, coffee tables and book shelves. Smoking should not be allowed in this room.

Blood Bank/Blood Gas Analysis

3.51 Space is required for the blood refrigerator. Space is also required to store and use the equipment required for biochemical tests, such as blood gas analysis, carried out during labour.

Clean Utility Room

3.52 A clean utility room should be provided close to the staff base: for a very large unit an additional room may be necessary. The room is used for the storage of all sterile packs, dressings, lotions, syringes, instruments and some drugs and dressing trolleys. Appropriate lockable cupboards and racking should be provided. Clinical handwashing facilities with a drainer and a heated lotion cupboard is required. (See HBN 40 "Common Activity Spaces Volume 1").

Dirty Utility Room

3.53 A main dirty utility room should be provided for the disposal and collection of waste products, bagged linen and items for return to the Sterilizing and Disinfecting Unit. The storage of bedpans and cleansing or destruction of them will be carried out here. Urine testing and the examination of the products of conception may also be carried out here. Space may be required for specimen storage. (See also HBN 40 "Common Activity Spaces" Volume 1).

Staff Base

3.54 The staff base must be sited centrally and overlooking the entrance to the delivery suite. It should be equipped for storage of records of women in labour, and current antenatal records when the outpatient suite is closed. Controlled drugs may also be stored, and an X-ray viewing panel and telephones provided. The base should be wired as the centre for the patient-to-staff and a staff call system within the area and central monitoring equipment for radio telemetry. The night entrance doorbell will be channelled through to the staff base. It should incorporate a facility for transferring a nurse-to-nurse emergency call to another manned point. (See also HBN 40 "Common Activity Spaces" Volume 1). A computer terminal and associated equipment should be located at the staff base — see paragraph 5.42.

Office Accommodation

3.55 One office is required for the medical staff and one for the midwives; another for interviewing relatives and staff and preparing reports. (See HBN 40 "Common Activity Spaces" Volume 1.)

Seminar/Staff Room (See paragraph 3.19)

3.56 Clinical teaching of staff can take place in this room. The room may also be used for tea and coffee breaks if it is inconvenient for staff to leave the department. Daylight and a congenial aspect should be a high priority.

Staff Changing

3.57 Changing accommodation for male and female staff, to permit them to change into suitable clothing for working in the delivery suite, should be provided at the entrance to the suite. Secure coat-hanging and lockers should be provided. Handwashing and grooming facilities should also be provided (see also paragraph 3.76 and HBN 41 "Accommodation for Staff Changing and Storage of Uniforms").

At least one WC ensuite to each changing room should be planned with shower facilities available.

Individual Storage

3.58 Storage is required for: —

a. a large room for the storage of bulky mobile equipment — see activity data sheet;

b. linen;

c. domestic cleaning materials, dry stores, underpads, toilet rolls etc;

d. supplies from the Sterilizing and Disinfecting Unit;

e. a transport incubator (switched socket outlet required).

Cleaners' Room

3.59 A well ventilated secure room is required near the entrance with provision for the storage and daily maintenance of mechanical cleaning equipment and the storage of cleaning materials. Coat hanging and small lockers may be required. (See HBN 40 "Common Activity Spaces" Volume 1).

Disposal Room

3.60 A disposal room to provide a holding area for bagged items, sterile supply returns and bulky containers

to wait removal by portering staff should be sited just within the entrance or immediately outside the suite.

Operating Suite

Reception Lobby

3.61 The patient will arrive on a trolley, bed or on foot. The question of transfer to theatre thereafter will depend upon local operational policies. The bed will be held here until required for the patient to be moved to the recovery area.

Anaesthetic Room

3.62 This room may be used for the induction of general, local or epidural anaesthesia. A waste anaesthetic gas scavenging system will be required.

Operating Theatre

3.63

a. Many patients having a Caesarean section will have the induction of anaesthesia carried out in this room.

b. The room should be large enough for major operating and life saving procedures to be carried out on the mother and for the care and resuscitation of a baby. Associated equipment including mechanical ventilation will be required.

c. Double doors should lead from the anaesthetic room and also into the exit corridor – single doors should lead to the dirty utility and sterile supply/preparation room.

d. A scrub-up and gowning bay should be within the theatre area. It should have a two place scrub-up sink and shelving or dispensers for gloves, gowns, masks etc.

e. The theatre should be provided with an operating table, adjustable operating lamp, X-ray viewer, piped anaesthetic gases, oxygen and medical compressed air and vacuum and ten switched socket outlets, for the mother. A waste anaesthetic gas scavenging system will be required.

f. Health authorities should pay particular attention to the fact that it is critical that appropriate stand-by sterilizing facilities should be available to the maternity department at all times.

g. The operating lamp must be automatically battery maintained.

h. In addition to the space and equipment required for the mother, an area within the theatre should be allocated for the reception and resuscitation of the newborn baby. A cot with an overhead heater or an incubator, and an infant resuscitation trolley will be required. Four switched socket outlets, oxygen and medical compressed air and vacuum and wall-mounted examination light are essential.

j. Other items of equipment will be brought into the room eg instrument trolleys, diathermy, monitoring equipment, anaesthetic trolley ventilator, a swab rack, containers for used swabs and soiled instruments etc.

Abnormal Delivery Room

3.64 The room should be sufficiently large to cater for deliveries known in advance to be abnormal. Its facilities should be designed so that it can be used as a back-up to the maternity operating theatre. The positioning of fittings and fixtures is important as the patient may require the use of many items of equipment which may have to be connected to outlets from the engineering services. (See Appendix 2 – Ergonomic Drawings.)

3.65 Adequate task lighting for operative procedures is required and must be automatically battery maintained.

3.66 A fixed rail attached to the wall behind the bedhead is useful. Alternatively a shelf for the storage of items may be satisfactory. Ten switched electric socket outlets, piped oxygen, medical vacuum, compressed air, nitrous oxide and $N_2O + O_2$ (nitrous oxide and oxygen) should be provided for the mother. A waste anaesthetic gas scavenging system will be required.

3.67 The area for the reception of the baby will require four switched electric socket outlets, piped medical vacuum oxygen and medical compressed air, and space for a cot with an overhead heater or an incubator; also a resuscitation machine.

Patient-to-staff and staff-to-staff emergency call points should be provided.

3.68 Equipment that may all be in use at the same time includes: –

a. intrauterine pressure and fetal heart monitor

b. anaesthetic machine

c. ventilator and humidifier

d. blood pressure monitor

e. syringe pumps – for the administration of drugs and fluids

f. intravenous infusion stand(s)

g. instrument trolley.

Recovery of Patient

3.69 A recovery area is needed in which the mother can be closely watched while she is recovering from the effects of anaesthesia. In designing this area, which should provide two places, provision must be made for the easy movement of stretchers and beds. Oxygen and medical vacuum and two switched electric socket outlets should be provided to each place.

A staff emergency call point should be provided in case of, for example, a cardiac arrest. A cupboard or shelving should also be provided for items of equipment which need to be at hand.

Clinical handwashing facilities are also needed and space for a small table or desk for the patient's records, large items of equipment eg ventilator, anaesthetic machine and equipment to intubate the patient etc.

The room should be directly adjacent to the operating room and should be mechanically ventilated.

Avoidance of Use of Flammable Anaesthetic Agents
3.70 It is envisaged that there will be no normal requirement for the use of flammable anaesthetic agents (eg ether or cyclopropane) in any of the accommodation comprising the Delivery Suite and the Operating Suite of a Maternity Department. Consequently the Departmental Cost Allowances do not include for the features associated with anti-static flooring.

3.71 A prominent notice should be displayed in all Delivery Rooms and in the Anaesthetic Room, the Operating Theatre and the Abnormal Delivery Room warning that these spaces are unsuitable for the administration of flammable anaesthetics.

3.72 Project teams are reminded that if they consider that there are exceptional local circumstances which might justify the potential use of flammable anaesthetic agents then this has significant implications. Not only will there be the additional expenses of the initial provision and subsequent systematic maintenance, including scheduled electrical resistance testing, of anti-static flooring but clothing, anaesthetic machines and all electrically powered equipment or parts of equipment (this includes ventilators, ECG and other patient monitoring equipment) used within the "Zone of Risk" must have been positively identified as suitable for such use. Many modern anaesthetic machines and other items of patient monitoring equipment are not suitable for such use. More detailed guidance on these aspects is given in Safety Information Bulletin No 37 SIB(87)79, dated November 1987.

Other Accommodation

Pantry/Beverage Point
3.73 A pantry is required within the delivery suite for the preparation of beverages and light snacks. It is assumed that, if required, main meals will be plated and delivered from the DGH kitchen and washing up will be done centrally.

Dirty Utility Room
3.74 A room is required for the cleaning of equipment between cases, disposal and examination of the products of conception, bagging of items for disposal, and returns to the SDU and laundry etc. A sink with drainer and scales for weighing the placenta should be provided. Equipment for the immediate cleansing of the operating room after each case should be kept in the dirty utility room.

Sterile Supplies Store/Preparation Room
3.75 Sterile packs and lotions are kept here and the trolleys may be "set up" in this room. A heated lotion cupboard is required.

Changing Rooms
3.76 In these rooms staff will change into theatre clothing, including special footwear. Staff should follow a sequence from "dirty" to "clean" areas arranged so that unchanged staff have no contact with those who have changed.

The rooms (one for males, one for females) should have space for four persons at one time. Provision should be made for the supply and disposal of theatre clothing. Doors will be required from the general area and into the clean corridor. A WC and shower should be ensuite.

3.77 **Switch Room** – see paragraph 3.25.

Essential Complementary Accommodation

Overnight Stay
3.78 The common room and sleeping accommodation for medical staff on-call must be conveniently accessible to the delivery suite. It may be necessary to provide overnight stay facilities in the suite itself. If provided, a WC and shower should be preferably ensuite or immediately adjacent. Sound attenuation is necessary for the degree of quietness required.

Optional Accommodation

Note: The spaces in paragraphs 3.79 and 3.80 are optional. Costings are provided.

Interview/Examination Room
3.79i A room with associated sanitary facilities ensuite may be provided at the entrance to the delivery suite where mothers and their relatives may be interviewed by medical staff or other staff if required. It may occasionally be necessary to examine, segregate, or even deliver a woman in this room, so the appropriate facilities, including medical gases, ventilation to control waste anaesthetic gas pollution and an examination lamp which is automatically battery maintained, should be made available.

3.79ii If this room is not to be provided, the policies in relation to examination/segregation of potentially/actually infected mothers may be implemented by the provision of one or more delivery rooms with ensuite sanitary facilities.

Emergency Obstetric Store
3.80 An emergency obstetric (flying squad) store may be required.

Antenatal and Postnatal Ward Accommodation (See Diagrams 7 and 8)

Scope
3.81 The function of maternity accommodation is to provide a suitable and safe environment for mothers and babies, and facilities for their diagnosis, monitoring, care and treatment. The psychological and other needs of mothers and babies should be considered, so that suitable conditions for maintaining family relationships, including visits by fathers, relatives and other people, are not overlooked. Facilities for teaching mothers, and medical, midwifery and nursing staff are needed too.

General Considerations
3.82 Accommodation should be planned to provide maximum flexibility in use. Mothers' needs however must not be compromised. The bed areas should be grouped to give a compact design, with ease of access to the clinical and ancillary rooms within the ward.

DIAGRAM 7

MATERNITY DEPARTMENT — WARDS

Main relationships within the department: flow lines indicate main relationships but do not signify their degree of importance

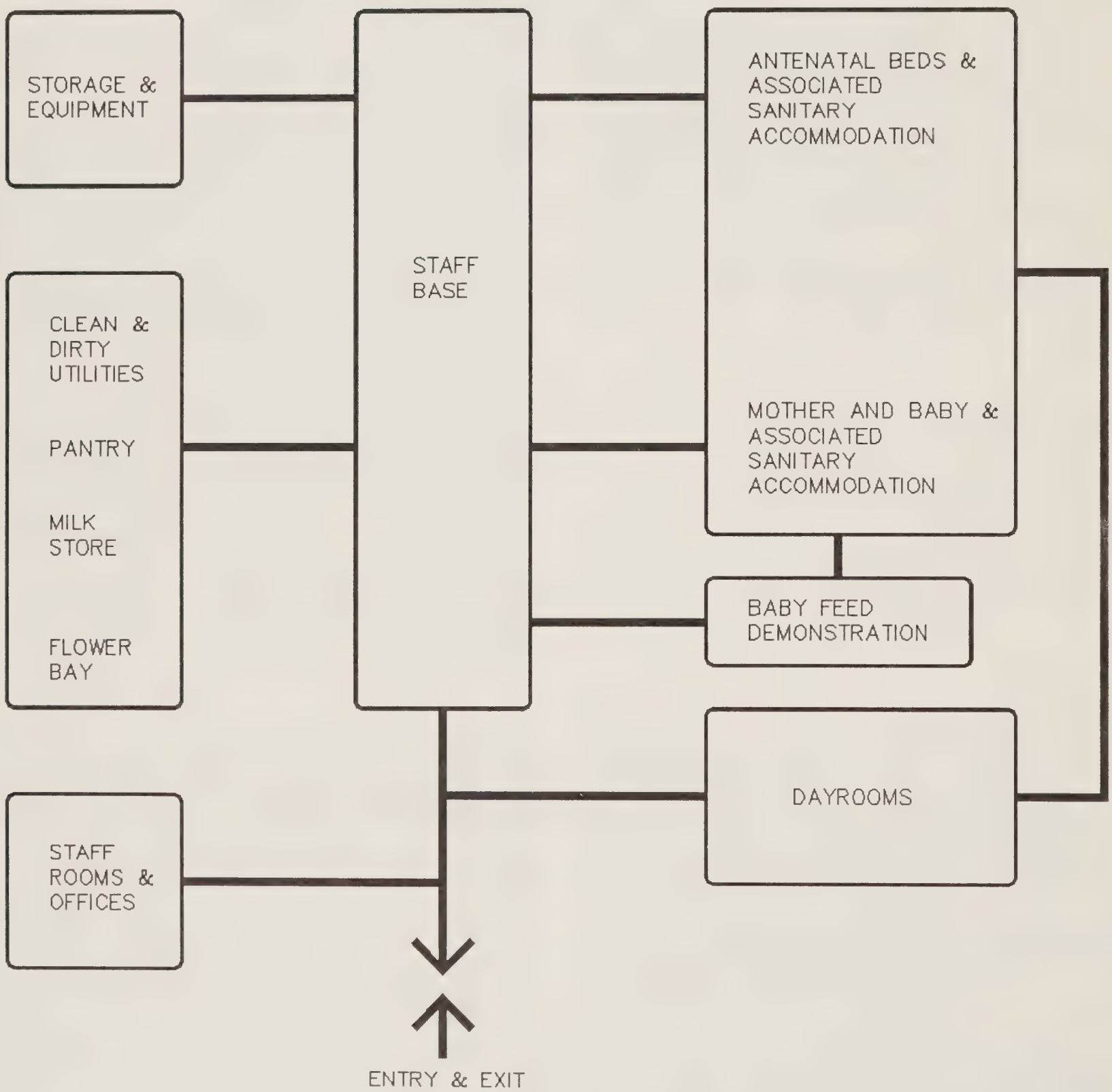


DIAGRAM 8

MATERNITY DEPARTMENT – WARDS

Patient and visitor access:
this diagram illustrates activities and is not intended to represent spaces

3.83 It must be borne in mind that the wards may not serve the maternity service throughout their lifetime, due to changing demography with resulting changes in the type and amount of accommodation required.

3.84 Some expectant mothers with complications of pregnancy, including certain medical and surgical conditions, will be admitted to the maternity wards.

3.85 The Maternity Services Advisory Committee's second report, Chapter 5, paragraph 5 recommended "Mothers admitted in an emergency or for a short antenatal stay should be accommodated in a ward area separate from mothers who are likely to be in hospital for a long time".

3.86 That Advisory Committee's third report, paragraph 9.4, also recommended that:

> "The size and design of rooms used for postnatal care should allow for the adequate supervision of mothers and babies at all times. Single rooms should be provided for mothers wishing to be alone or requiring special care or treatment, the number depending on the design of accommodation and assessment of likely needs. Shared rooms should have curtains around each bed to allow individual privacy when required. All rooms should be suitably furnished and attractively decorated. Windows should provide adequate natural daylight and ventilation and have curtains or shades."

3.87 Postnatal mothers and babies staying for 24 to 48 hours only will require the same accommodation as those staying for 7 to 10 days or more. The design should allow for the rooming-in of babies with their mothers in all bedrooms.

3.88 The design should permit various patterns of care to be carried out. A ward may be designated for separate or mixed antenatal and postnatal care. No additional facilities are required, whether the ward is designated for consultant or GP responsibility.

3.89 In these wards, the environment should be as non-clinical and domestic as possible. The design should, however, be suitable for adaptation for medical or surgical specialities.

3.90 Efficient patterns of communications, supplies and service should be planned.

The Mothers' and Babies' Needs

3.91 The primary need is for an environment which is best suited to the needs of mother and baby at any given stage, either antenatally, during early labour or postnatally.

This involves providing space for:—

- —her baby beside the bed;
- —antenatal and postnatal exercises within the bed area and for parentcraft teaching either individually or in a group;
- —personal belongings;
- —visitors' needs.

Other considerations are privacy during care in the ward; opportunity to speak to staff; the room designated as a nursery, the bathroom and WC being close at hand; and day and sitting rooms.

Staff Needs

3.92 These needs mainly concern space and communications.

a. **Space** is required for the following:—

- —examination, treatment and care for the mother and baby in privacy in the bed area or room which may be used as a nursery, with good observation *from* the staff base by midwives;
- —ease of access to records, space for writing up records and privacy to discuss them with the mother, relatives and staff, as the case may be;
- —sufficient space in the curtained cubicles and single rooms to allow mother and baby to be attended in visual privacy by a midwife, or doctor;
- —the midwife to assist an ambulant or wheelchair mother in the toilet. (See "Common Activity Spaces" HBN 40, Volume 1).
- —sufficient storage for materials and equipment conveniently located near their points of use.

b. **Communications**. Facilities are required for locating and summoning other staff within the ward or outside the ward, especially in an emergency. Short walking distance between bed areas and the main ancillary area is a desirable feature.

Needs of Visitors

3.93 Fathers, children and other relatives will be welcome in the bedrooms and day rooms. Therefore:—

a. adequate space and furniture should be provided in the bed area;

b. there should be facilities for reception, waiting and interviewing;

c. facilities for beverages and refreshment may be needed.

Relationship to other Hospital Services

3.94 The operational policies for the wards should interrelate with those for other hospital wards and clinical departments, and incorporate whole hospital service policies.

Training/Teaching

3.95 Some space in addition to that which is provided in the Education Centre, may be required in the immediate vicinity of the wards for clinical tuition, case conferences and the training needs of midwifery, nursing and medical staff (see also paragraphs 5.22–5.25).

Organisation/Design

Antenatal Area

3.96 These women are admitted as a result of referrals from the maternity outpatient suite, the general practitioner or community midwife, domiciliary visits, the

delivery suite or from other departments in the hospital or other hospitals. They may arrive on foot, in a wheelchair or bed or on a trolley and may be accompanied by relatives or friends. It may be the policy that some mothers will receive additional antenatal supervision and treatment on a day care basis.

Antenatal fetal monitoring. The midwife using a portable monitor

The postnatal examination. The mother watches the midwife examining her new baby

The design should take into account the following needs: —

i All women need a friendly and welcoming environment;

ii Some need quiet, some need company;

iii Some need to be nursed in single rooms for a variety of clinical reasons;

iv Some will be there for only a short period, some for several weeks;

v Some will be admitted only once; some several times;

vi Some will require regular monitoring of their own and their baby's condition;

vii Some will go into labour in the antenatal ward; (NB transfer is noisy).

viii Some may have infections;

ix Some need very complex nursing care; others almost none.

Postnatal Mothers and Babies

3.97 Postnatal mothers and babies will be transferred from the delivery suite, the operating theatre, other hospitals or admitted from home. Normal healthy babies and some babies requiring additional care will room-in with their mothers. Their cots should be beside the beds, not at the end of them.

Bedrooms

3.98 Facilities should be provided for the mothers to be cared for in either single or 4 to 6 bedded rooms. Care should be taken to ensure that women who are ill or highly dependent can be nursed close to the staff base.

3.99 Two of the single rooms in each ward should each have a WC, shower and bidet ensuite. In each area used for postnatal care a room should be so designed that it can, on occasions, be used as a nursery to accommodate those few babies who have to be removed temporarily from their mother's bedside. This room should have an observation window and be sited close to the staff base.

3.100 Each multi-bed room should also have a WC, shower/bathroom ensuite or adjacent so that mothers have easy access to toilet facilities.

3.101 The "Common Activity Spaces" HBN 40, Volume 1 gives information on space requirements and door widths etc.

3.102 Storage is required for the mothers' personal and hospital clothing and equipment. Mothers should have easy access to toilet articles, water jug and glass etc from either the left or right hand side according to their needs. Babies' clothing and equipment should be stored in their trolley cot cupboard. The baby's bath/bowl may also be stored in the cot.

3.103 Washing facilities with elbow action taps are required in each room. There should be adequate space below the taps to allow bowls/baby baths to be filled.

3.104 A small sitting/dining area within a multi-bed complex is desirable.

3.105 HTM66 (see paragraph 5.43) should be consulted in relation to curtain tracks. The curtain material should be shadow proof and flame retardant. If a ceiling-mounted track is provided the curtains should have a net heading to ensure ventilation and light when the curtains are drawn.

Bedspace

3.106 Each bedspace will require:

a. An adjustable bedhead lamp, with dimming facility.

b. A bedhead services panel with: outlet for patient handset; 13 amp power point; staff-to-staff emergency call and outlet for earphones.

c. A patient handset control unit incorporating patient-to-staff call; radio channel selector and a volume control for radio and TV; bedhead lamp switch with dimming position.

d. Convenient access to oxygen and piped medical vacuum which may be incorporated in the bedhead panel.

e. A suitable bed, possibly a King's Fund bed, a bedside locker (or locker wardrobe), chair, and overbed table.

f. A conveniently located outlet for a telephone trolley.

g. A multi-bed room designated for mothers and babies needing additional care will require piped oxygen, compressed air, and vacuum at each bedspace, and extra socket outlets.

Day Space

3.107 Mothers may use the day space for reading, relaxation, watching television, receiving visitors and recreational purposes. Because of the practice of early ambulation following delivery the majority of mothers will not be confined to bed. Day rooms provide a change of environment, a place to meet fathers, relatives and their other children or to meet mothers from other bedrooms and enjoy a relaxed setting.

3.108 The designer should aim to create an environment which is cheerful, comfortable and warm. Appropriate lighting and decorative features such as pictures and plants can provide a tasteful domestic atmosphere. Finishes and furniture will have an important influence on the day room. A variety of easy chairs, bookcases and coffee tables should be provided.

Windows

3.109 Care is needed to ensure that mothers and babies do not suffer discomfort from draughts. Glare and solar gain from windows must be controlled. (See also paragraph 5.33).

Staff Base

3.110 The staff base is the administrative and communication centre of the ward. It should be sited so that the maximum number of bedrooms and the room designated as the nursery are within sight and hearing of staff within its vicinity. The entrance to the ward should also be visible from the base so that staff can see visitors entering the ward. The activities include the exchange of oral and written reports, and use of telephones. Confidentiality is often essential. Staff conversations and telephone calls should not be overheard by mothers. The base should be wired as the centre for the patient-to-staff and also staff call systems within the area. Services areas, such as the clean and dirty utility rooms, should be near the staff base to achieve minimal walking distances for staff (see paragraphs 3.115 and 3.116). Endeavour should be made to minimise the disturbance of mothers by sound and light created by the general activities. A computer terminal and associated equipment should be located at the staff base – see paragraph 5.42.

Sanitary Facilities

3.111 Importance should be paid to the availability of and easy access to WCs and bathrooms etc. The location of these rooms adjacent to or ensuite with single and multi-bedded rooms plays an important part in the mothers' comfort.

WCs

3.112 WCs, which must also include hand washing facilities, should be located close to bed and day spaces. Mothers will need to use the WC before bathing/showering. A WC should therefore be provided in these rooms with a staff call system. Mothers in wheelchairs and mothers who need to be assisted by staff should not be left unattended. Privacy should be achieved by the position of the WC and door; an internal curtain screen may be required.

Bidets

3.113 The need for bidets can be decided at project level.

Bathrooms/Showers

3.114 Ordinary domestic bathrooms or shower rooms meet the needs of most mothers. One free-standing bath should be provided so that the mother can be assisted from both sides; or a mobile hoist could be used.

Clean Utility

3.115 Provision is required for the storage and preparation of drugs, medicines and lotions and a working supply of clean and sterile supplies, for the parking of the medicine trolley with secure lock, and the parking of dressing trolleys. These facilities should be under the direct view of the staff base. (See "Common Activity Spaces" HBN 40, Volume 1.)

Dirty Utility

3.116 This room should be easily accessible to the bed areas but mothers should not be disturbed by the noise created by bedpan macerators or disinfecting washing machines. Facilities for urine testing should be provided. Mechanical ventilation will be required to remove odours as dirty and foul linen will be held here temporarily. (See "Common Activity Spaces" HBN 40, Volume 1.)

Pantry/Beverage Point

3.117 This guidance assumes there will be a centralised catering service delivering individual trays from the central kitchen, and that a central washing-up service is available. The function of this area is the preparation of beverages and snacks, the storage of dry food, milk and a limited amount of cutlery and crockery. Facilities for serving and heating food brought in by relatives, especially ethnic groups, should be available. There should be facilities for hand washing and for the disposal of waste. Space to park a beverage trolley and the catering department meal trolley is required.

Flower Bay

3.118 Mothers receive large quantities of flowers and plants and a place must be provided where vases can be stored, flowers arranged etc. There is an advantage of having the bay/room accessible to mothers and relatives. Space for a flower trolley is needed.

Disposal Room

3.119 Bagged refuse for disposal, and linen and equipment for re-processing is held here awaiting collection. It should be accessible from within the ward and close to the main hospital corridor or street, for loading onto trucks/tugs. Adequate ventilation is required. (See "Common Activity Spaces" HBN 40, Volume 1.)

Doctor's Office/Interview Room

3.120 A room is required where doctors can write up notes and give occasional consultations.

Sister's Office

3.121 This room can also be used for staff to prepare reports.

Storage and Equipment Requirements

3.122 Adequate storage should be provided for:—

- —general goods including stationery;
- —bulk packs of disposable items eg bedpans, sanitary pads, underpads, baby napkins, paper towels etc;
- —nursing equipment eg bed and cot accessories, spare pillows, infusion stands, monitoring devices;
- —linen and blankets.

The range and quantity of items can fluctuate and is often influenced by the service provided.

Equipment Park

3.123 Parking space is required for a wheelchair, telephone trolley, adult and baby weighing machines, spare stacking chairs and patient trolley. Special parking facilities may be needed for trolleys and incubators used in emergencies.

Switch Room

3.124 – see paragraph 3.25.

Essential Complementary Accommodation

Day Space

3.125 In addition to the day space provided in paragraph 3.107, it will be necessary to provide a space for those who wish to smoke. This may be shared between two adjacent wards, allowing a better utilisation of space (see paragraph 5.11 about smoking).

Seminar Room

3.126 A seminar room is required for meetings and midwifery tutorials involving up to 8 persons. Provision for viewing X-rays and note-taking will be required. This room can be shared between two or more wards.

Consultation and Examination Room

3.127 This room could be shared between two wards but should not be used routinely for other purposes.

Milk Kitchen/Store

3.128 A room is required for the storage and distribution of commercially pre-packed baby milk and disposable utensils. Facilities for the demonstration of the preparation of baby feeds on a domestic scale should be provided. A small refrigerator, a sink with drainer and storage space is required. This room may be shared between two wards.

Cleaners' Room

3.129 A well ventilated secure room is required with provision for the storage and daily maintenance of mechanical cleaning equipment and the storage of cleaning materials. Coat hanging and small lockers may be required. This space may be shared between two wards (see HBN 40, "Common Activity Spaces" Volume 1).

Optional Accommodation

Note: The area in paragraphs 3.130 to 3.132 is optional. A costing is available.

Staff Changing

3.130 If a central or zonal changing facility exists, then a cloakroom with small personal lockers will be required. This should be adjacent to or include a WC with handbasin for general use by staff. Spare lockers should be available for visiting staff.

3.131 If female staff do not use a central/zonal facility then a curtained cubicle will be required in their changing room, so they can change in privacy. Full length personal lockers will be needed for secure storage of clothing and personal items. There will also need to be a facility for the temporary secure hanging of wet clothes. (See HBN 41 "Accommodation for Staff Changing and Storage of Uniforms").

3.132 Appropriate arrangements should be made for any male staff who are employed.

The Neonatal Unit (see Diagram 9)

Scope (see paragraphs 2.16 to 2.23 and 2.30).

3.133 The neonatal unit will provide inpatient care for newborn babies, who by reason of their immaturity or medical condition require additional care which cannot be given at the mothers' bedside. Parents will wish to be present most of the time and will expect to be shown how to care for their babies and to participate in their care.

The neonatal intensive care room. Two babies receiving constant monitoring, care and supervision.

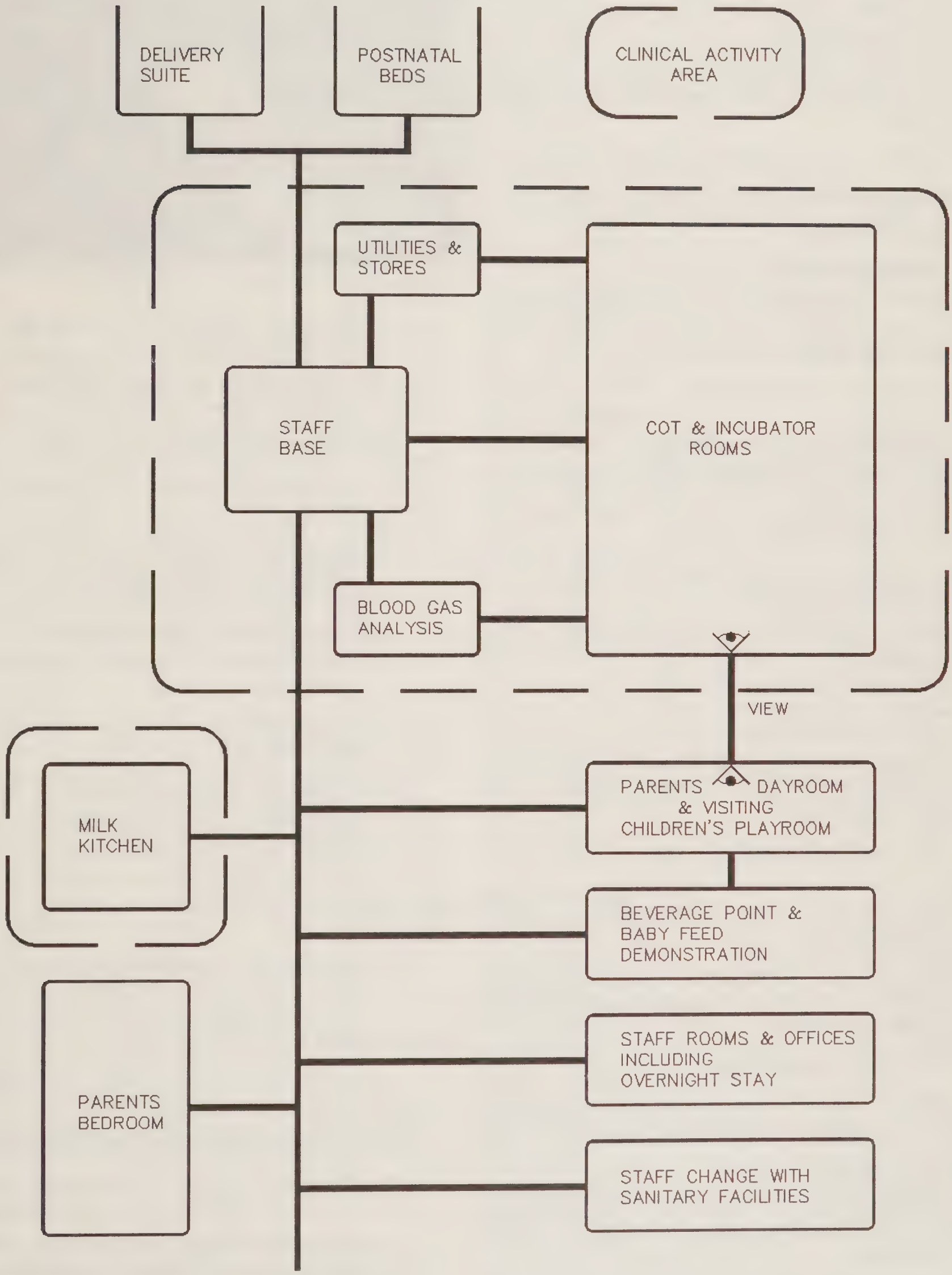
Intensive neonatal care. In spite of her size, the mother is able to hold her baby and help in her care and treatment

Ready for home. The parents with their baby about to leave the neonatal unit

DIAGRAM 9

MATERNITY DEPARTMENT: NEONATAL UNIT

Main relationships within the department



General Considerations

3.134 The accommodation should provide for flexibility of use and allow for changes in medical and nursing practice, so far as is reasonably practical.

The needs of babies will vary, eg: –

i intensive care for those babies requiring constant care, observation and monitoring. In some units the babies may remain for short term intensive care only and then be transferred to a designated neonatal intensive care unit or back to the referring hospital.

ii special care and treatment and a degree of observation not readily provided on a postnatal ward.

iii care for babies following neonatal surgery.

Provision will need to be made for parents to be accommodated in the unit.

Size of Neonatal Units

3.135 This should be determined by the health authority, taking into account local needs. Examples of factors to be considered in deciding the size are: –

– the number of births expected;

– an assessment of the proportion of babies born with conditions that make it unlikely they could be cared for with their mothers in areas used for postnatal care;

– the level of intensive care the unit is expected to provide within the Region's strategy;

– the need to care for babies remaining in the unit after a period of intensive care;

– the need to provide postnatal care for mothers residing in the unit.

The Babies

3.136 Babies will be nursed in cots or incubators in a range of rooms according to their need for life support systems, intensive care and treatment, monitoring and observation or isolation.

3.137 The design should provide for: –

– glazed panels, to give maximum observation of all cot spaces from areas within the unit; blinds or curtains should be included.

– adequate space in all cot areas for staff and parents, sophisticated treatment, life support systems, bulky or fragile equipment.

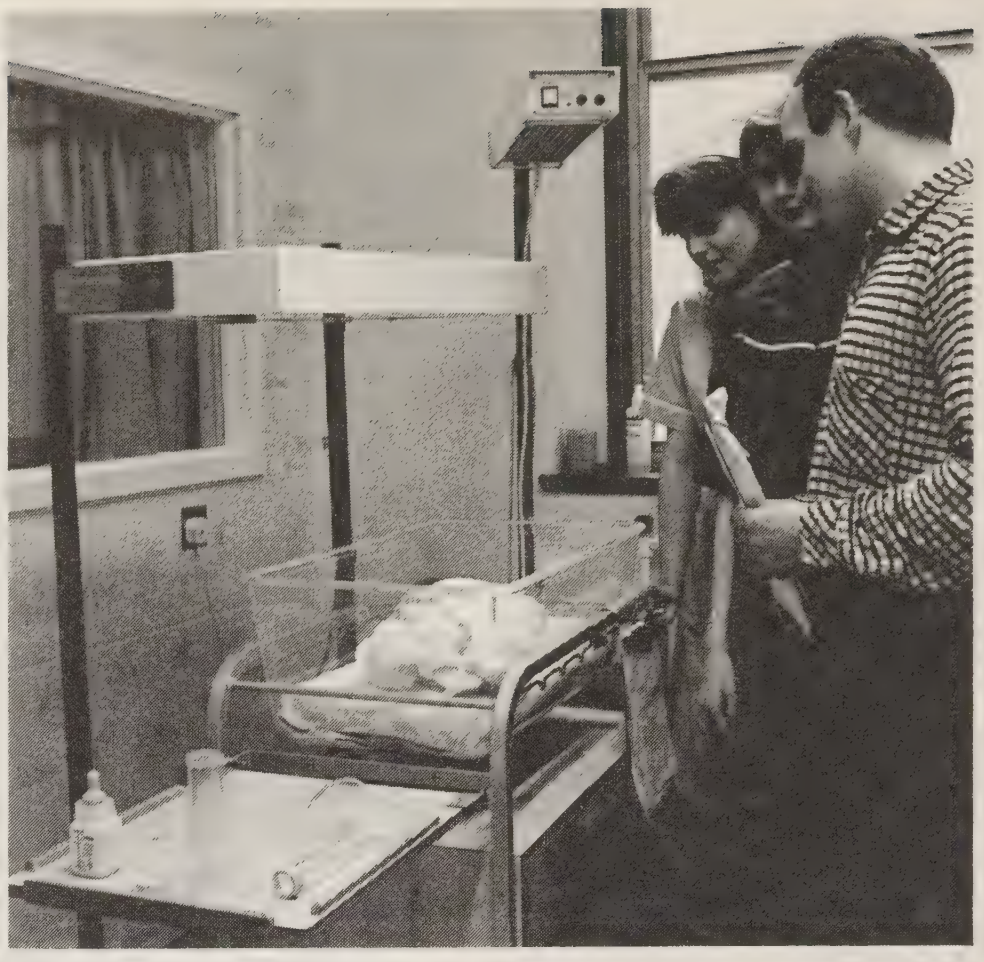
– daylight in all nursery areas.

– facilities for darkening in one room for examination of the baby's eyes and transillumination of the skull, etc.

Parents and Visitors

3.138 Parents will be encouraged to visit and stay with, handle and care for their babies, therefore the design should provide: –

i adequate space within the nurseries for parents to sit with and care for their baby, including an area where the parents of a dying baby may be with him in privacy;



The parents with their small baby discussing her care.

ii sitting space for adults and play space for other siblings (see paragraph 3.143);

iii toilet facilities adjacent to the unit;

iv observation of one multi-cot nursery from the day/play room;

v bedrooms for postnatal mothers and mothers re-admitted to establish and retain contact with, and learn how to care for their babies;

vi hand washing and coat-hanging etc facilities for visiting parents; this should include a small secure locker;

vii adequate door widths to allow easy access for wheelchairs;

viii a pantry for beverages and snacks which may also be used as a teaching area for mothers and students in the preparation of baby feeds on a domestic scale.

Medical and Nursing Staff

3.139 Staff require: –

i sufficient space and easy access to all cot areas to observe, care for, examine and treat the baby – and adequate room for all the equipment which may be in use;

ii facilities for locating and summoning staff quickly in an emergency;

iii short walking distances between all rooms;

iv sufficient storage for materials and equipment located conveniently near to the point of use;

v incubators, weighing scales and other pieces of bulky equipment to be held for immediate use in a space which will allow the equipment to be manoeuvred safely.

vi ease of access to medical records and space to write up the records and privacy to discuss them with parents, relatives and staff;

vii privacy to see parents, to give information, teach or counsel them;

viii laboratory facilities (see paragraph 3.155);

ix overnight stay for doctors (see paragraph 3.159).

Relationship to Other Hospital Services

3.140 The operational policies should incorporate whole hospital policies, eg supply (including sterile supply) and disposal, pharmacy, pathology, domestic cleaning, staff changing, medical records etc.

Security

3.141 Precautions are necessary to safeguard premises, in particular drug cabinets. The entrance to the unit should have a controlled access and be visible from the staff base.

Accommodation Required

Nurseries

3.142 Single and multi-cot nurseries will be required. To assist the containment of air-borne infection a minimum of two single-cot nurseries should always be provided and multi-cot nurseries should not contain more than six cots. The babies' lives will depend on the environmental conditions and life support systems in each nursery and adequate provision of engineering services is essential. Each cot space should have direct access to two oxygen, one vacuum and one medical compressed air outlets and twelve electrical socket outlets. The general lighting should have good colour rendering and the intensity should be variable. Each cot space will also require a wall-mounted adjustable examination lamp conveniently available. A clock with a sweep second hand should be clearly visible from within each nursery.

Each nursery will require mechanical ventilation with humidification and controlled air movement. Room temperatures must be capable of independent variation in the range 21°C to 30°C. Windows on external elevations should be designed to avoid condensation and to prevent excessive solar gain. The design of the windows should ensure that cot spaces are not subject to direct sunlight. A hand-wash basin with lever action taps and a mixed outlet is required in each nursery.

Day/Sitting/Play Room (see paragraph 3.138 ii)

3.143 This room should be furnished on a purely domestic scale, socket outlets should be provided for a table lamp, television, radio etc; telephone and television jack points should be included too.

The room should be adjacent to a nursery and the dividing wall should be glazed so that brothers and sisters playing under supervision in this room can see their parents and their 'new' baby.

Staff Base

3.144 The staff base should overlook the entrance and also provide adequate observation of babies. The babies' records are held here and X-rays can be viewed. Nurse-to-nurse calls, monitoring display units and all alarms should be centred here. In addition, the computer terminal and associated equipment should be located at the staff base – see paragraph 5.42.

Utility Areas

3.145 A room is required for holding clean and sterile supply items, drugs, medicines and lotions. Within this room, a separate area should also be provided where a small washing machine/dryer is installed, together with sink and drainer facilities for cleaning and rinsing small items of equipment.

Facilities are also required for cleaning, decontaminating and the maintenance of incubators and other equipment. The location of such facilities will depend upon local whole hospital policies, but may be in the Sterilizing and Disinfecting Unit.

Disposal Area

3.146 A disposal area should be provided for soiled linen and waste materials awaiting collection. An adjacent bay or alcove is also required where used bowls and instruments can await return to the Sterilizing and Disinfecting Unit for reprocessing. This area should be near the entrance to the neonatal unit.

3.147 A Linen Room or Bay for storage of baby clothes and linen is required.

Equipment Room

3.148 This must be large enough to store the spare cots/incubators, infusion stands and other numerous bulky items of equipment. More than one such space may be needed.

Cleaners' Space

3.149 A well ventilated secure room is required with provision for the storage and daily maintenance of mechanical cleaning equipment and the storage of cleaning materials. Coat hanging and small lockers may be required. This room is for the sole use of the neonatal unit (see HBN 40 "Common Activity Spaces" Volume 1).

Seminar Room

3.150 Staff education and training will take place in the nurseries, and in the seminar room. The room may also be used by the clinical teacher from the Education Centre and as a staff room where beverages can be taken.

Staff Changing

3.151 Changing accommodation for male and female staff, to permit them to change into suitable clothing for working in the neonatal unit, should be provided at the entrance to the suite. Secure coat-hanging and lockers should be provided. Handwashing and grooming facilities should also be provided (see HBN 41 "Accommodation for Staff Changing and Storage of Uniforms").

Milk Kitchen

3.152 A room for the storage of commercially prepacked baby foods, preparation of special formula baby feeds and the storage of baby bottles, teats, equipment and disposable items should be provided. Some mothers will need to express their milk for their babies on the neonatal unit and there must be facilities in this room for its storage and collection. Refrigeration facilities will be required for special formula baby feeds and human milk feeds.

Office
3.153 One office is required for the nurse in charge of the neonatal unit.

Beverage Point/Kitchen
3.154 A small pantry within the area is required, where beverages and cool drinks can be obtained by staff and parents.

Laboratory
3.155 A small room should be available where blood gas analysis and other tests which have to be carred out frequently can be performed.

Switch Room
3.156 – See paragraph 3.25

Essential Complementary Accommodation

Parents' Suite
3.157 i **Bedrooms**
At least two domestic type bedrooms (with space for cots), one of which is twin-bedded, should be provided for resident parents. A nurse call, radio sound, TV outlet and over-bed light should be available.

ii **Pantry**
A pantry where parents can prepare beverages and light snacks and where mothers can be taught how to prepare artificial feeds on a domestic scale is required.

iii **Toilet Facilities**
A WC and shower should be close to the bedrooms.

Transport Incubator Bay
3.158 In a unit providing a paediatric flying squad all the equipment necessary must be readily available to the staff who may travel out, and an area in the unit must be available to store this equipment.

Office
3.159 One office is required for the medical staff and one for the nurses; another for interviewing relatives and staff and preparing reports. (See HBN 40 "Common Activity Spaces" Volume 1.) One office for the medical staff should be designated and furnished for overnight stay.

Optional Accommodation

Note: The space in paragraph 3.160 is optional. A costing is to be available.

Milk Bank
3.160 Some units may receive human milk from donors in which case there must be facilities for the reception and storage in domestic freezers. Facilities are needed for pasteurisation of this milk, a process which is increasingly being automated. Facilities are reuired for milk samples to be taken for laboratory testing, storage of collecting bottles and clerical tasks associated with the receipt of the milk and maintenance of detailed and long term records.

4 Engineering Requirements

Introduction

4.1 This Chapter describes the engineering services contained within the Maternity Department and their integration with the engineering systems serving a whole site. Its purpose is not to inhibit the design solution but to acquaint the engineering members of the multi-disciplinary design team with the criteria adopted (in the terms of material specification, design conditions and reference data) to meet the functional requirements.

4.2 Documents referred to by number eg,[10] are listed at the end of this Chapter. They are numbered in order of first appearance, repeated references retaining the same number.

Model specifications

4.3 A series of model specifications for the specialised engineering services in health-care buildings have been issued nationally and are sufficiently flexible to reflect local needs. The cost allowance for the engineering services in each functional unit of this department is based on the qualities of material and workmanship described in the relevant parts of the model specifications.

Economy

4.4 Engineering services are a significant proportion of the capital cost and thereafter remain a continuing charge on revenue budgets. Therefore the project design engineer should ensure not only utmost economy in initial provision, consistent with meeting the functional requirements and maintaining clinical standards, but also the optimum benefit from the total financial resources these services are likely to absorb during their lifetime.

4.5 Where alternative design solutions are available their consequential capital and running costs should be compared using option appraisal techniques[1] so that due consideration is given to the need for, and the cost of, maintenance and the eventual replacement of plant and equipment.

4.6 The economic appraisal of alternative design solutions should include the heat conversion and distribution losses at the point of use. Where buildings are located remote from the development's load centre these losses can often equal the useful energy consumed.

4.7 In any new project, consideration should be given to energy management and facilities offered by a whole hospital control system, to enable some measure of energy accounting to be exercised at departmental level.

4.8 After satisfying the Building Regulations[2] on the standards of thermal insulation provided, consideration should be given to the economics of additional insulation to the ground floor slab and to the roof (Engineering Data Sheet CE7[3] refers), particularly where accommodation is located in a building of low-rise construction. Where there is a solidly constructed ground floor, the inclusion of floor insulation will also contribute to patient and staff comfort. Guidance concerning the economic thickness of thermal insulation relative to the cost of energy, 'K' values, temperature differences, capital costs and hours of use is given in Engineering Data Sheet CE11.[4]

4.9 Similarly, in view of the increasing costs of generating heat energy, consideration should be given to the economics of appropriate equipment for recovering some of the value of the energy which would otherwise be discharged by mechanical ventilation systems, and also for programmed turning off, or reduction, of heating and ventilation in those spaces used only for part of the day.

Maximum demands

4.10 User demand on engineering services is often difficult to predict, but experience indicates that services designed for simultaneous peak conditions are seldom fully utilised in practice. The estimated maximum demand and storage requirement (where appropriate) for each engineering service in this accommodation will need to be assessed individually to take account of the range, size and shape of the functional units, geographical location, operational policies and intensity of use. As a guide and for preliminary planning purposes only, the following are the estimated maximum demands for a Maternity Department having an Outpatient Suite with 8 consulting and examination rooms, a Delivery Suite with 8 delivery rooms, Ward accommodation having 24 antenatal/postnatal beds and a Neonatal Unit with 8 cot spaces.

Service	*Typical Max Demand*	*Notes*
Heating ventilation DHWS (kW)	310	
Domestic HWS (litre/sec)	5	Storage 1,850 litres (2 hours recovery)
Cold water (litre/sec)	6	Storage 15,000 litres (24 hours supply)
Supply ventilation (m^3/s)	2.7	
Extract ventilation (m^3/s)	2.7	Clean and dirty
Conditioned Supply Ventilation = (m^3/s)	3.5	
Conditioned Extract Ventilation = (m^3/s)	3.6	
Cooling for Air Conditioning (chilled water) (kW)	30	
Electrical (kVA)	50	Includes Essential 35 kVA
Medical gases (litre/min)		
Oxygen	250	
Nitrous oxide	80	
Nitrous oxide and oxygen	100	
Vacuum	1,100	
Compressed air	1,000	
Fuel gas	N/A	
Steam (Kg/hour)	100	Humidification only

Space requirements for services

4.11 The satisfactory performance of plant in health-care buildings is particularly important and the design should allow for ease and safe means of access and space for the necessary frequent inspections and maintenance and for eventual removal and replacement. As far as practicable, however, this access should be protected from unauthorised entry.

4.12 Recommended spatial requirements for mechanical, electrical and public health engineering services in health buildings are given in HTM23.[5] The information in that publication is specifically intended for use during the initial planning stages when precise dimensional details of plant are not available.

4.13 The distribution of mechanical and electrical services to final points of use should, wherever possible, be concealed in walls and above ceilings. Heat emitters should be contained within a 200 mm wide perimeter zone under window sills and critical dimensions should be taken from the boundary of this zone. For costing purposes the 200 mm zone which includes the floor area occupied by minor vertical engineering ducts is included in the building circulation provision. Services above the clean and sterile areas associated with the operating theatre, delivery rooms and neonatal cot rooms should be confined to those required for these particular areas.

Activity data

4.14 User requirements, environmental conditions and equipment arrangements, as described in the Activity Data sheets (Chapter 7), should be referred to when positioning service components and outlets. Where the latter are for patient operation, they should be of the simplest pattern and designed to inhibit interference.

Safety

4.15 Section 6 of the Health and Safety at Work Etc Act 1974[6] as amended by schedule 3 of the Consumer Protection Act 1987,[7] imposes statutory duties on all persons who design, manufacture, import, supply, install or erect "articles for use at work". One of the requirements of this section is to ensure, so far as is reasonably practicable, that the article is so designed and constructed that it will be safe and without risks to health at all times when it is being set, used, cleaned or maintained by a person at work. All parts of engineering systems are covered by the term "articles for use at work" and designers of the systems for health care premises must therefore fulfil their statutory obligations.

Fire safety

4.16 Design guidance for the fire safety requirements in new health buildings is given in HTM 81.[8] Technical information concerning the design and specification of fire detection and alarm systems is detailed in HTM 82[9] which also replaces or modifies certain clauses of BS 5839 Part 1[10] to meet the needs of health care premises. More general advice on fire prevention including the storage of flammable materials is given in HTM 83.[11]

4.17 The design of the engineering services should accord with the recommendations in the above series of HTMs and the engineer should verify his proposals in accordance with the procedure described in paragraphs 5.7 to 5.10.

Noise

4.18 Excessive noise in the individual areas, whether internally or externally generated and transmitted, can adversely affect the operational efficiency of the department and can cause discomfort. The limits and means of control advocated in Hospital Design Note 4[12] including its revisions[13] and Engineering Data Sheet DH1[14] should provide an acceptable acoustic environment. Careful design of ventilation systems and the choice and location of appropriate finishes are required to ensure that an acceptable sound level is achieved in the wards, delivery suites, neonatal unit and overnight stay accommodation. In addition to designing for control of noise levels, there may also be a need to ensure speech privacy, ie that confidential conversation is unintelligible in adjoining rooms or spaces. This will typically, but not exclusively, be required in consulting/examination rooms and interview rooms. The acceptable noise level, and any requirement for speech privacy, where applicable, in the individual spaces in this department is shown on the Activity Data "A" Sheets.

Control access

4.19 Primary engineering distribution control and isolation devices must be protected against unauthorised operation, eg switchgear and fuse-boards should be housed in secure cupboards. They should be located in circulation rather than working areas and where appropriate should easily be accessible for staff operation.

Engineering commissioning

4.20 It is most important that engineering services should be fully commissioned. HTM 17[15] describes the requirements which should be included in the design and construction contract documents. Flow measurement and proportional balancing of air and water systems requires adequate test facilities eg orifice plates, venturi valves etc to be incorporated at the design stage.

MECHANICAL SERVICES

General scope

4.21 The mechanical services include the provision of heating, ventilation, air conditioning, hot and cold water and medical gases. For cost allowance purposes the distribution of the heating, hot and cold water and medical gases systems is deemed to commence at their points of entry into the department and includes pipework, ductwork, fittings, controls and connections to equipment and terminal outlets. The cost allowance includes for the air handling, treatment and refrigeration plant, together with associated controls, for the ventilation and air conditioning systems; and also for the waste anaesthetic gas scavenging equipment.

4.22 For environmental requirements in individual spaces, reference should be made to the Activity Data Sheets. Recommended room temperatures, air change rates, hot water service temperature etc are grouped under "Technical Design Data" on each 'A' sheet. The 'B' sheets

give the disposition of engineering outlets for the activities described.

Heating

4.23 General space heating requirements can usually be met by low pressure hot water radiators operating as a sub-system from the primary heating distribution system. Some areas, as detailed on the Activity Data Sheets, require the use of low surface temperature heating, utilising convectors or enclosed radiators designed to ensure that their surface temperature does not exceed 43°C.

4.24 Radiators should normally be located under windows or against exposed walls, with sufficient clear space between the top of the radiator and the window sill to prevent curtains reducing the output and adequate space below to allow cleaning machinery to be used. Where a radiator is located on an external wall, back insulation should be provided to reduce the rate of heat transmission through the building fabric.

Temperature controls

4.25 To facilitate overall temperature control the heating system flow temperature should normally be varied via an external compensator and thermostatic valves should be installed on all heating appliances. These valves should be of robust construction and selected to match the temperature and pressure characteristics of the heating system. The thermostatic head, incorporating a tamper-proof facility for presetting maximum and minimum room temperature, should be controlled via a sensor located integrally or remotely as appropriate. Where space is restricted, or heat gains and/or losses are particularly variable, consideration should be given to the provision of thermostatically controlled fan-convectors fitted with low-limit control, but only where the generated noise is unlikely to be a nuisance.

4.26 The heating within the Outpatient suite should be equipped with time switch control to "set back" the temperatures to a lower level during the night and at weekends. A manual override for a limited period should be provided so that staff can promptly restore the plant to its full operational state, including any associated ventilation systems.

Ventilation—General Requirements

4.27 Recommendations for the ventilation of individual spaces in this department are shown on Activity Data 'A' sheets. Certain areas have a medical requirement for ventilation and, in some cases, air conditioning.

4.28 Mechanical ventilation systems are expensive in terms of capital and running costs and planning solutions should be sought which take maximum advantage of natural ventilation. It is acknowledged that planning constraints imposed by the building shape and/or functional relationships of specific spaces will often result in some measure of enclosed internal areas. Ventilation costs can however be minimised by ensuring that wherever practicable core areas are reserved for rooms that require mechanical ventilation irrespective of whether their location is internal or peripheral. Examples are sanitary facilities, dirty utility, beverage preparation areas, and rooms whose clinical or functional requirements have specific environmental needs and where for reasons of privacy and absence of solar gain etc, windowless accommodation is acceptable. Other spaces appropriate to core areas are those which have only transient occupation and therefore require little or no mechanical ventilation. Examples are circulation and some storage areas.

4.29 Air movement induced by mechanical ventilation should be from clean to dirty areas where these can be defined and generally be arranged to encourage uniform air movement within the space. The design should allow for an adequate flow of air into any space having only mechanical extract ventilation. Transfer grilles should be provided in doors or walls to connect such spaces to either naturally ventilated corridors or other spaces with mechanical air supply. Such arrangements however should avoid the introduction of untempered air and should not prejudice the requirements of fire safety or speech privacy.

4.30 As referred to in paragraph 4.18 care should be taken in the design of the ventilation systems to maintain noise at an acceptable level and to limit the transfer of noise between adjacent areas on the same system.

4.31 The attention of the interior designers should be brought to the need to consider the ventilation when planning and specifying curtain tracks. If the location of the curtains may affect the ventilation then they should be provided with a net heading.

4.32 The fresh air supply should be tempered and filtered before being distributed via high level diffusers with output profiles designed to avoid discomfort to lightly clad patients or babies. Ventilation supply plant should include air filters having a minimum arrestance of 85% and a minimum average dust spot efficiency of 25% when tested in accordance with BS 6540, Part 1.[16] Filters must be readily accessible for replacement and maintenance purposes and provided with a pressure-differential indicator; coarse pre-filters may be necessary where the intake air is exceptionally polluted. Heater batteries should be sized for the ventilation requirements only, ie not the fabric loss.

4.33 A separate extract system will be required for 'dirty' areas, eg utility and sanitary facilities and a dual motor/fan unit with an automatic changeover facility should be provided to ensure that these rooms are always maintained at a negative pressure when the department is in use.

4.34 External discharge arrangements for extract systems should be protected against back pressure from adverse wind effects and located to avoid re-introduction of exhausted air into the building through air intakes and windows.

Ventilation of Delivery Rooms

4.35 The general ventilation of the delivery rooms will be the main means for controlling the level of waste anaesthetic gas pollution in these spaces because there is currently no practicable method of capturing exhaled nitrous oxide/oxygen mixtures from the vicinity of a mother in labour.

4.36 At the present time there are no generally agreed standards either for an acceptable level of waste anaesthetic gas pollution or for the testing procedures to be used to establish residual levels. Based on a series of field tests (which were conducted by the Health and Safety

Executive under actual working conditions in a maternity department) it is recommended that balanced supply and extract ventilation within the range of 6 to 7 air changes per hour be provided for delivery rooms.

Ventilation controls

4.37 Supply and extract ventilation systems should include local controls and indicator lamps to confirm the operational status of each system. Where the use of a system is on a regular daily pattern, as is likely to be the case in the Out Patients accommodation of a Maternity Department, a time-switch control with manual override for a limited period should be considered. Where a system is provided for a particular space the indicators should be in or immediately adjacent to that space and, in the case of a more general system of ventilation, eg toilet areas, the indicators should preferably be located at the staff base. Where manual controls are available for staff use they should be provided with labels clearly defining their functions.

Air conditioning plant and controls

4.38 Provision should be made for providing conditioned air to the Operating Suite and the cot areas of the Neonatal Unit. The plant should be capable of maintaining winter and summer design temperatures in these areas, as detailed on the Activity Data sheets, by providing either heating or cooling throughout the year depending on the room requirements.

4.39 The ventilation plant arrangement and air movement control scheme for the Operating Suite should be in accordance with the details set out in the design guide Ventilation of Operating Departments,[17] with particular reference to the maintenance of positive pressure differentials both with doors closed and when they are opened.

4.40 The plant for the Operating Suite should be equipped with a manual control to switch it to an "out of use" state. In this state the ventilation rates should be reduced to a level sufficient to provide the pressure differential necessary to maintain sterile conditions, the temperature of the areas should be set back and no cooling should be provided. The manual control should be located for use by supervisory theatre staff, with visual indication of plant status at the control point and in principal rooms.

4.41 Within the Neonatal Unit individual control of the temperatures in each of the cot areas is required over the ranges set out on the Activity Data Sheets.

4.42 Recirculation of air should not be used although other methods of achieving energy reclaim, eg by heat exchangers, are permissible if they can be justified economically.

Hot, cold and drinking water services

4.43 The domestic hot water supply should be taken from the general hospital calorifier installation at an outflow temperature of 60°C±2.5°C and distributed to all outlets so that the return temperature at the calorifiers is not less than 50°C. In a number of areas, as set out on the Activity Data Sheets, the temperature at the outlets should be limited to 43°C±2°C for safety reasons. This reduction should be achieved by installing for each fitting a locally adjustable thermostatic mixing valve, preset and locked to provide a blended water temperature not exceeding 43°C. The mixing valve should be of a type that is unaffected by changes in water pressures and should "fail-safe", ie automatically close the hot water supply if the cold water supply fails. The provision of one mixing valve to supply a group of fittings is not acceptable.

4.44 Guidance concerning cold water supply pipework and distribution systems is given in HTM 27.[18]

4.45 For frost protection purposes and to prevent condensation staining decorative finishes all cold water pipework, valves and flanges should be insulated and vapour sealed.

4.46 To control legionellae the water services should be designed, installed and commissioned in accordance with the recommendations in the DHSS Code of Practice.[19]

4.47 Outlet fittings for wash basins, sinks, showers etc are shown on Activity Data 'B' sheets.

Piped medical gases and vacuum

4.48 Guidance regarding piped medical gases is given in HTM 22[20] and any subsequent published amendments. The location of terminal outlets is indicated on the Activity Data sheets. It should be noted that in the delivery suite outlets are required for the "baby" positions as well as for mothers.

4.49 In the Operating Suite and the Delivery rooms provision should be made for scavenging waste anaesthetic gases in accordance with the recommendations of BS 6834.[21]

ELECTRICAL SERVICES

General scope

4.50 The electrical installation will include main intake switchgear and wiring and equipment for lighting, power, and environmental plant, together with the earth bonding of extraneous metal work. Extensions from the hospital central systems for telephones, computers (conduits only), clocks, fire alarms and staff location services, together with separate patient and staff call systems, will also be required. These installations should comply in all aspects with the current Regulations for Electrical Installations[22] and conform to the requirements of HTM 7.[23]

4.51 Reference should be made to the Activity Data sheets for the recommended levels of internal illumination, disposition of outlets for power, telephones, call systems, clocks, etc in individual spaces.

4.52 The point of entry for the electrical supply will be a departmental switchroom housing the main isolators, with provision for metering, and the main distribution equipment. The switchroom will also be the distribution centre for subsidiary electrical services and, wherever possible, all equipment should be mounted at a height to give easy access from a standing position. The switchroom should be positioned so as to minimise the cost of cabling required to serve the department.

Electrical installation

4.53 The electrical installation in occupied areas should be concealed usually using PVC insulated cable in screwed steel conduit or trunking but, in certain circumstances, mineral insulated copper covered cables may be necessary. External installations should comprise PVC insulated cables in galvanised screwed steel conduit with fittings of weatherproof pattern. Steel conduit and trunking wiring ways for communication and computer systems should also be concealed wherever possible.

Electrical interference

4.54 Guidance concerning the avoidance and abatement of electrical interference is given in HTM 14[24] and fluorescent luminaires (lighting fittings) should comply with BS 5394.[25]

4.55 Care should be taken to avoid mains borne electrical radio frequency interference affecting electro-medical equipment used here or elsewhere in the hospital.

Lighting

4.56 Practical methods of lighting the various functional spaces are contained in the CIBSE Lighting Guide[26] and the choice of luminaire should take account not only of the requirement for light distribution and visual comfort appropriate to the space but also the operational efficiency of the light source used. Luminaires should be of types which are easily cleaned and maintained, as well as being manufactured and tested in accordance with the requirements specified in the relevant sections of BS 4533.[27] Their location should be readily accessible for lamp changing and maintenance, but with the overriding requirement that the recommended standard of illuminance is provided to the task areas. Luminaires using fluorescent lamps should be installed when artificial lighting is required for long periods or where areas are devoid of natural light; intermittently used luminaires may be fitted with incandescent or compact fluorescent lamps.

4.57 In reception and circulation areas colour graphics and lighting should be co-ordinated to create a calm and welcoming atmosphere whilst also contributing to the safe movement of patients throughout the department.

4.58 It is essential that fluorescent lighting in clinical and bed/cot areas is derived from one of the recommended types of lamps having suitable colour rendering characteristics.[28] In such areas the colours chosen for walls, floors and ceilings should be carefully selected; architects and engineers should collaborate to ensure that the decorative finishes are compatible with the colour rendering properties of the lamp and that spectral distribution of the light source is not adversely altered. HN(85)20[29] (in Wales CAWO (85)3) describes some high efficiency fluorescent lamps with good colour rendering properties which are also suitable for general use within this department.

4.59 Control of lighting is normally by local switches and these should be provided in sufficient numbers to allow variation in lighting options, eg reduced levels of illuminance when circumstances permit and when differing levels are required for medical reasons, also to encourage energy conservation. This is particularly relevant in rooms where, because daylight is restricted, supplementary artificial lighting is required for long periods in areas remote from windows.

4.60 In areas where computer terminals are to be used, the lighting should be designed to avoid bright reflections on the screen and to ensure that the contents of the screen are legible. Further guidance can be found in CIBSE Technical Memoranda TM6.[30]

4.61 It should be remembered that most mothers are not "ill" in the normal sense and that childbirth is usually a natural physiological event. In this connection areas should, wherever possible, be planned to provide a relaxed, non-clinical environment devoid of an institutional atmosphere. The design of the lighting can make a major contribution to achieving the desired environment and the engineer should co-operate with the architect to this end.

4.62 Consideration should be given when planning lighting to the location of cubicle curtain tracks in bed, examination and shower areas. The lighting should be designed to avoid dark areas when curtains are drawn or alternatively curtains with a net heading should be used.

Corridor lighting

4.63 The lighting of corridor and circulation areas, which generally are areas not covered by Activity Data sheets, should be in accordance with the guidance contained in HBN 40.[31] The method of lighting corridors can make a major contribution to the creation of a non-institutional environment.

External lighting

4.64 When considering the provision of lighting to external areas it should be remembered that patients, staff and visitors will be entering and leaving at any time of the night, rather than just during the evenings. The lighting of car parks, paths, access roads and areas outside entrances should be adequately lit at all times.

4.65 Where the planning of the department results in the provision of courtyards these should be provided with lighting, both to enable patients, visitors and staff to use the areas in the evenings and to provide a visually attractive view from bed and sitting spaces.

Lighting in bed areas

4.66 Lighting to bed areas should be designed to provide levels of illuminance and limit the glare to recumbent patients as set out in the CIBSE Lighting Guide.[26]

4.67 Adjustable wall mounted incandescent reading lights should be provided for each bed, including those in the delivery suite, in accordance with the CIBSE Lighting Guide.[26] The lights should be arranged to have a 'dim' position for use by staff to observe a sleeping patient.

4.68 Night lighting should be incorporated into the lighting for bed areas and corridors to them. This lighting should provide no more than 0.1 lux at the bedhead with between 3 and 5 lux in circulation areas.

4.69 Luminaires in bed areas should comply with the requirements of BS 4533: Parts 102.55 and 103.2.[32]

4.70 The staff base should be equipped with separate lighting for use at night. This lighting should provide illuminances of between 30 and 100 lux in working areas. Light-

ing sources should be shielded to prevent distraction or glare to patients attempting to sleep.

Examination Lighting

4.71 Examination luminaires are to be provided in consulting/examination rooms, treatment rooms, delivery rooms, theatres, cot rooms, etc as detailed on the Activity Data Sheets. These should operate at extra low voltage, be totally enclosed, be equipped with a heat filter and the temperature of external surfaces must be such as to avoid injury to patients and staff. These luminaires should comply with the requirements of BS 4533: Part 102.55[32] and be in accordance with the performance specification of Type A included in BS 4533: Part 103.2.[32]

Operating suite lighting

4.72 In both the operating theatre and the abnormal delivery room an adjustable operating theatre table luminaire should be provided. Recommended mounting height is a minimum of 3.0 m above floor level. These luminaires should comply with the requirements of BS 4533: Parts 102.55 and 103.2.[32]

Neonatal units lighting

4.73 The lighting in the cot areas of the neonatal unit should be designed to keep the luminance of the surfaces and lighting sources seen by recumbent babies to within the limits set out in the CIBSE Lighting Guide.[26]

Controlled Drugs cupboard

4.74 In compliance with HC(77)16 (WHN(77)32 in Wales)[33] a red indicating lamp should be provided on each Controlled Drugs cupboard, with a remote indicating lamp where appropriate outside the doorway to the room in which the cupboard is located and at the corresponding staff base. The lamps should be interlocked with the cupboard to give visual indication when the cupboard is unlocked and should be supplied from an essential circuit. For further information see HTM 63 – Fitted Storage Systems[34] and its associated specification for electrical services. The cupboards should be in accordance with BS 2881.[35]

Socket-outlets and power connections

4.75 Sufficient 13 amp switched, shuttered socket-outlets, connected to ring or spur circuits should be provided to allow all portable appliances likely to be used simultaneously to be individually supplied. Activity Data Sheets indicate specific locations for the outlets associated with individual activities; the installation of twin outlets should be considered where these activities occur in juxtaposition. It should be noted that outlets are required for the "baby" positions as well as for mothers.

4.76 In treatment areas socket outlets should be designed so that a supply is available in these areas from at least two separately fused circuits of common phase.

4.77 Domestic cleaning appliances with flexible leads nine metres long should be assumed and switched socket outlets, usually in corridors, should be provided to enable such machines to operate over the whole area of the department.

4.78 Fixed appliances rated up to 13 amps should be permanently connected to double pole switched spur boxes and fused as required. Appliances rated in excess of this load, or those requiring a three-phase supply, should be permanently connected to separate final circuits from fuse-boards and independently switched.

4.79 Local switches or other means of electrical isolation should be provided adjacent to plant and equipment to ensure the safety of operators and maintenance staff.

4.80 Heating appliances and automatically operated equipment should be provided with indicator lights to show when the equipment is energised. Such indicators should be incorporated either in the control panel of the apparatus, in the control switch, or in the socket-outlet from which the apparatus derives its supply.

4.81 The electrical supply connections to electro-medical equipment should comply with BS 5724.[36]

4.82 Advice on the power supply requirements for mobile radiodiagnostic equipment is given in HTM 7.[23]

Emergency electrical supplies

4.83 Guidance concerning the provision of emergency electricity supplies is given in HTM 11,[37] and the grade of standby lighting provision is shown on the Activity Data "A" sheets. Safety lighting in accordance with HTM 11[37] and BS 5266[38] should be provided on primary escape routes.

4.84 The operating theatre table luminaires in the operating theatre and abnormal delivery room and the mobile examination luminaires in the normal delivery rooms should be connected to circuits provided with low capacity batteries and appropriate change over contractors to provide a "no break" supply to these fittings in accordance with the details described in HTM 11.[37]

4.85 All socket outlets in the clinical areas of this department should be connected to essential supply circuits.

4.86 All communications, clock and alarm systems in this department should be capable of being automatically transferred to the hospital standby generation system.

Patient/staff call system

4.87 Call points locations are indicated on the Activity Data sheets. A visual and audible indication of operation should be provided at the staff base and repeated at other appropriate points to give responding staff unambiguous identification of the call source. Guidance concerning the provision of patient/staff call systems is given in HTM 15.[39] Guidance concerning bedhead units for patient/staff call systems is given in Engineering Data Sheet DU3.1.[40]

Staff location system

4.88 The staff location system employed in the hospital should be extended to give adequate cover to this department. Guidance on these systems is given in HTM 20.[41]

Telephones

4.89 Central telephone facilities for internal and external calls will normally be available and should be extended to serve this department in accordance with the requirements shown on the Activity Data sheets. Telephones will normally be of desk pattern.

4.90 Guidance concerning the provision of telephone systems and equipment, including the telephone internal

cabling distribution and telephone hand sets, is given in HBN 48[42] (in preparation).

4.91 In addition to the above facilities, outlets should also be provided for coin box telephones, either of the fixed or trolley pattern as appropriate, in accordance with the requirements shown on the Activity Data sheets. All such equipment should be connected direct to the public network by separate exchange circuits and not routed via the hospital switchboard. It is also recommended that all terminations provided for connecting a particular trolley phone be wired to a common exchange circuit, as far as is practicable, in order to economise on the number of exchange lines allocated to this facility.

Wireways For Data Links

4.92 Wireways, which should be segregated from both the electrical power and the telephone internal cabling distribution systems, will usually be required for computer links between the main hospital computer system and the reception counter in the outpatient suite and the staff bases in the delivery suite, wards and neonatal unit.

Radio and Television

4.93 The radio/television relay system should be supplied via the hospital communal aerial installation and central amplification equipment.

4.94 Radio and TV sound should be available at each bed position with a handset having a selector switch and volume control serving an earphone unit.

4.95 TV aerial outlet sockets should be provided in dayspaces.

4.96 Details of the requirements for radio and TV are shown on the Activity Data Sheets.

Medical monitoring facilities

4.97 Wireways for medical monitoring equipment are to be provided in the delivery suite and the neonatal unit. Details of the areas to be served are set out on the Activity Data Sheets.

Electric clocks

4.98 Clocks should operate in conjunction with a master clock system. If such a system is not available synchronous clocks should be installed using a common clock circuit suitable for future connection to a master system. The location and types of clocks are indicated on the Activity Data Sheets. In circulation areas, clocks should be installed only where they can be viewed by numbers of staff/patients/visitors.

Lightning protection

4.99 Protection against lightning should be provided in accordance with HTM 7,[23] HSE Data Sheet DB2[43] and BS 6651.[44]

INTERNAL DRAINAGE

General scope

4.100 The primary objective is to provide an internal drainage system that uses the minimum of pipework and remains water and air-tight at joints and connections, but is sufficiently ventilated to retain the integrity of water seals.

Design parameters

4.101 General design guidance is given in the relevant British Standards, including BS 5572,[45] and the current Building Regulations. Recommendations regarding spatial and access requirements for public health engineering services are given in HSE Data Sheet EA5.[46]

4.102 The gradient of branch drains should be uniform and adequate to convey the maximum discharge to the stack without blockage. Practical considerations such as available angles of bends/junctions and their assembly, as well as space considerations, usually limit the minimum gradient to about 1:50 (20 mm/m). For larger pipes, eg 100 mm diameter, flatter gradients can be used but require workmanship of a high standard if adequate self-cleansing flow is to be maintained. It is not envisaged that pipes larger than 100 mm diameter will be required within inter-floor or ground floor systems serving this department.

Operational considerations

4.103 Unusual and difficult maintenance problems can arise because of user interference and abuse. For example, the disposal of paper towels into WCs after hand-washing or after their misuse for some other purpose is a frequent cause of blockages, particularly in long branches laid to flat gradients. Adequate provision of disposal receptacles or, where appropriate, the installation of warm-air dryers can help to mitigate this problem.

Materials specification

4.104 The materials specified for the drainage system in this department will depend upon their location and the nature of the effluent being discharged. Waste pipework should, as far as practicable, be concealed; where exposed, it should be metallic and very securely fixed. Although adequate for drainage requirements, UPVC may not always be acceptable to the fire officer and neither should it be installed above "sensitive" areas, eg operating theatres, intensive therapy, switchrooms, etc.

References

1. **Department of Health and Social Security and Welsh Office**. Health Service Management. Investment appraisal in the public sector [HN(82)34] London DHSS, 1982 2pp.
2. **Building Regulations 1985**. (SI 1985 No 1065). London, HMSO, 1985.
3. **Department of Health and Social Security**. Thermal insulation of roofs (DHSS Engineering Data Sheet CE7). London, DHSS, 1976 8pp.
4. **Department of Health and Social Security**. Economic thickness of thermal insulation. (DHSS Engineering Data sheet CE11) London, DHSS, 1986 108pp.
5. **Department of Health and Social Security and Welsh Office**. Access and accommodation for engineering services (Hospital Technical Memorandum 23) London, HMSO, 1972. 36pp.
6. **Health and Safety at Work etc Act**. 1974. HMSO.
7. **Consumer Protection Act, 1987**. HMSO.
8. **Department of Health and Social Security and Welsh Office.** Fire safety in health care premises – planning and design of new buildings. (Health Technical Memorandum 81) London HMSO.
9. **Department of Health and Social Security and Welsh Office.** Fire safety in health care premises – Fire alarm and detection systems (Health Technical Memorandum 82) London HMSO.
10. **British Standards Institution**. BS 5839: 1980. Fire detection and alarm systems in buildings; Part 1. Code of Practice for installation and servicing. 32pp.
11. **Department of Health and Social Security and Welsh Office**. Fire safety in health care premises. General fire precautions (Health Technical Memorandum 83) London, HMSO.
12. **Ministry of health**. Noise control. (Hospital Design Note 4) London, HMSO, 1966. 20pp.

13. **Department of Health and Social Security**. Health Services Management – Hospital Design Note 4 (noise control): amendments to appendices II, IV and VII. (HN(76)126) London, DHSS, 1976. 2pp. (In Wales, WHN(77)1).
14. **Department of Health and Social Security**. Noise and vibration (DHSS Engineering Data Sheet DH1) London, DHSS, 1977. 24pp.
15. **Department of Health and Social Security**. Health building engineering installations: commissioning and associated activities (Health Technical Memorandum 17) London HMSO 1978. 6pp.
16. **British Standards Institution**. BS 6540: Part 1: 1985. Methods of test for air filters used in air conditioning and general ventilation. 32pp.
17. **Department of Health and Social Security**. Ventilation of operating departments: a design guide. London, DHSS 1983. 91pp.
18. **Department of Health and Social Security and Welsh Office**. Cold water supply. (Health Technical Memorandum 27) London, HMSO, 1978. 74pp.
19. **Department of Health and Social Security and Welsh Office**. The control of Legionellae in health care premises services. A Code of Practice. London, HMSO. 1988.
20. **Department of Health and Social Security and Welsh Office**. Piped medical gases, medical compressed air and medical vacuum installations. (Health Technical Memorandum 22) London, HMSO, 1977. 62pp.
21. **British Standards Institution**. BS 6834: 1987. Specification for active anaesthetic gas scavenging systems. 12pp.
22. **Institution of Electrical Engineers**. Regulations for Electrical Installations. 15th edition. IEE, 1981. 216pp.
23. **Department of Health and Social Security and Welsh Office**. Electrical services: supply and distribution. (Health Technical Memorandum 7) London, HMSO, 1977. 48pp.
24. **Ministry of Health**. Abatement of electrical interference. (Hospital Technical Memorandum 14) London, HMSO, 1965. 26pp.
25. **British Standards Institution**. BS 5394: 1983. Radio interference limits and measurements for luminaires. 12pp.
26. **Chartered Institution of Building Services Engineers**. Lighting Guide: hospitals and health care buildings. Publication No. LG2, CIBSE. 1989. 77pp.
27. **British Standards Institution**. BS 4533: Luminaires, Part 101: 1981. General Requirements and Tests. (15 Sections).
28. **Department of Health and Social Security**. Electrical lighting specification for good colour rendering fluorescent lamps suitable for use in hospitals and other health care buildings. (Hospital Service Engineering Data Sheet DE 2.1/5) London, DHSS, 1987. 5pp.
29. **Department of Health and Social Security**. Health Services Management. Low energy fluorescent lighting with good colour rendering properties [HN(85)20] London, DHSS, 1985. 3pp.
30. **Chartered Institution of Building Services Engineers**. Lighting for Visual Display Units: Technical Memoranda TM6, 1981.
31. **Department of Health and Social Security and Welsh Office**. Common Activity Spaces Health Building Note 40 – volume 2: corridors. London, HMSO, 1986.
32. **British Standards Institution**. BS 4533: Part 102.55: 1986. Specification for Luminaires for Hospitals and Health Care buildings; Part 103.2: 1986. Specification for Photometric characteristics of luminaires for Hospitals and Health Care buildings. 20pp and 16pp.
33. **Department of Health and Social Security**. Health Services Management. Misuse of Drugs Regulations 1973 (HC(77)16) London, DHSS, 1977. 3pp.
34. **Department of Health and Social Security**. Fitted storage systems. (Health Technical Memorandum 63). London, HMSO, 1986, 32pp.
35. **British Standards Institution**. BS 2881: 1969. Hospital cupboards (wall fixing) for poisons and dangerous drugs. 24pp.
36. **British Standards Institution**. BS 5724: Part 1: 1979. Specification for general safety requirements of medical electrical equipment. 20pp.
37. **Department of Health and Social Security and Welsh Office**. Emergency electrical services. (Hospital Technical Memorandum 11) London, HMSO, 1974. 37pp.
38. **British Standards Institution**. BS 5266 Part 1: 1975. Code of Practice for emergency lighting of premises. 24pp.
39. **Ministry of Health.** Patient/nurse call systems. (Hospital Technical Memorandum 15) London, HMSO, 1966. 28pp.
40. **Department of Health and Social Security**. Bedhead Services. (DHSS Engineering Data Sheet DU3.1), London, DHSS, 1986. 36pp.
41. **Ministry of Health**. Staff location systems. (Hospital Technical Memorandum 20) London, HMSO, 1968. 10pp.
42. **Department of Health and Welsh Office**. Telephone services Health Building Note No 48 (In preparation).
43. **Department of Health and Social Security**. Lightning protection for hospitals (Hospital Services Engineering Data Sheet DB2). London, DHSS, 1971. 15pp.
44. **British Standards Institution**. BS 6651: 1985. Code of Practice for protection of structures against lightning. 80pp.
45. **British Standards Institution**. BS 5572: 1978. Code of Practice for sanitary pipework. 60pp.
46. **Department of Health and Social Security**. Horizontal and vertical drainage – access and accommodation. (Hospital Service Engineering Data Sheet EA5) London, DHSS, 1978. 19pp.

5 Environmental and Other Topics

Introduction

5.1 This Chapter provides design guidance based on the service objectives outlined in Chapter 2, and includes information on a range of topics and environmental matters which should be taken into account when designing a maternity department.

Works Guidance Index

5.2 Whilst the HBN provides guidance that is current at the time of publication, it must be borne in mind that there are wider considerations associated with medical gases, high risk infectious diseases, fire, energy conservation etc covered by other published guidance which must also be taken into account. Additionally, some aspects of the guidance in this HBN may from time to time be amended or qualified and it is necessary for project teams to check with the current edition of the Works Guidance Index. The Index is published by the Department in May each year and updated in September and January. It should be noted that as the Index covers the guidance current in the previous year it carries the previous year's date.

Statutory and Other Requirements

5.3 Health Circular HC(88)60/HC(FP)(88)29 issued in December 1988, advises health authorities that their building schemes should comply with the requirements of building legislation, even where these are not legally enforceable against authorities, and with all other relevant codes of practice standards. It also requires authorities to ensure they have adequate procedures to ensure compliance. Attention is also drawn to HC(86)14 – in Wales WHC(87)7 – issued in November 1986 concerning Food Hygiene and Pest Control in the Health Service, and HC(87)3 – in Wales WHC(87)8 – issued in January 1987 concerning Health and Safety at Work: Crown Immunity. These give the practical implications of the change in the law on Crown Immunity. This Note takes account as far as possible of all statutory and other requirements currently in force but health authorities are reminded of their responsibility for ensuring compliance with statutes, regulations, codes and standards.

Economy

5.4 The planning of hospital buildings requires design solutions which not only satisfy functional requirements but also ensure maximum economy in respect of both capital and running costs. Due weight must therefore be given to the questions of space provision, maintenance (including cleaning), energy consumption and staffing requirements.

5.5 Planning should ensure that spaces are used as intensively as possible and are not unnecessarily duplicated. Economical space provision can be achieved in the following ways:

a. by planning for spaces to be used more intensively for a particular purpose. This means that the amount of space for a service or group of services should be no more than is needed for the anticipated workload, staffing levels and available revenue allocation, and that spaces should be used more, where possible, by different users of the same speciality;

b. by planning for spaces to be used for more than one function or purpose. This means reducing the specialised nature of the accommodation, when possible, so that its use by various people for various purposes is not unduly restricted or precluded.

5.6 To ensure that there is no over-provision of new accommodation, project teams should first evaluate the utilisation of similar existing facilities in relation to their workload and staffing.

Fire Precautions

5.7 It is essential that project teams familiarise themselves with the guidance contained in the FIRECODE series of documents which together give the Department's policy and technical guidance on fire precautions in hospitals and other NHS premises. In particular, the need for structural fire precautions and means of escape from the whole accommodation must be taken into account at the earliest possible planning stage. The key document for these aspects in hospitals is FIRECODE: "Fire Precautions in new hospitals", Health Technical Memorandum 81.

5.8 In addition, basic policy, principles and key management guidance are contained in "FIRECODE: Policy and Principles". Other FIRECODE documents include the Health Technical Memoranda "80" series (which give technical guidance on various building, engineering and equipment issues), the Fire Practice Notes series (dealing with various specialist aspects of fire precautions) and Nucleus guidance. Existing HTMs will, in due course, be reissued in FIRECODE format. The series includes "FIRECODE: Directory of Fire Documents" which lists references to relevent legislation and relevant fire precautions guidance issued by the Department and other sources, for example, the Home Office. FIRECODE and publications in the HTM "80" series are listed in the bibliography at the end of this HBN.

5.9 It is important to establish during the design stage those aspects of fire safety strategy which affect the design, configuration and structure of a project. At appropriate stages of the design process, the architect and engineer should discuss and verify their proposals with the local fire authority, and ensure that the project team and all other planning staff are fully acquainted with the *fire*

safety strategy for the design in terms of operations (staff responsibilities etc), equipment provision, and buildings and engineering layouts. Health Technical Memoranda 57, 58, 59 and 60 give detailed information on the selection of fire resisting components.

5.10 The principles of fire safety apply equally to new projects and to alterations and upgrading of existing buildings.

Smoking

5.11 Health Circular HC(85)22 dated May 1985 – WHC(85) 31 dated June 1985 in Wales – provides guidance about smoking on health premises. While recognising that the responsibility for determining local policies rests with the health authority, the circular recommends that smoking should be restricted as far as is practicable and, where it is permitted, confined to specially designated areas which are clearly signposted. In such areas ventilation should be sufficient to prevent discomfort to non-smokers and the spread of odours to other areas of the premises. In particular, the outpatient suite should be a "no-smoking" area.

Upgrading or Adaptation of Existing Buildings

5.12 The standards set out in this guidance essentially apply to the provision of a maternity department by new building and it is not intended that they should be applied retrospectively to existing stock. However, the principles are equally valid and should be applied, so far as is reasonably practicable, when existing accommodation is being upgraded or new accommodation is being constructed within an existing building, which may previously have been used for other purposes.

5.13 The cost of upgrading work should conform to the guidelines indicated in the Department's WKO letter (81)4 issued on 24 July 1981. These guidelines take into consideration the estimated life of the existing building and the difference in cost between upgrading a building and new building.

Before any decision is made to carry out an upgrading project, consideration must be given to the long-term strategy for the service; the space required for the new service, and the size of the existing building. Regard must also be paid to the orientation and aspect of building and the adequacy and location of all necessary support services.

5.14 If there emerges a prima facie case for upgrading, a thorough analysis of all functional and physical conditions of the existing building should be undertaken. When comparing the cost of upgrading or adapting an existing building to that of a new building, in addition to the building cost due allowance must be made for the cost of relocating people, demolition and salvage costs, disruption of services in a phased project, and the temporary effects on running costs of any impaired functioning of areas affected by upgrading.

5.15 The check of physical and other aspects of existing buildings should include:

a. availability of space for alterations and additions;

b. type of contruction;

c. insulation;

d. age of the buildings, condition of fabric, eg external and internal walls, floors, roofs, doors and windows, which may be determined by a condition survey;

e. life expectancy and adequacy of engineering services, ease of access and facility for installation of new wiring and pipework, if required;

f. the height of ceilings (high ceilings do not necessarily call for the installation of false ceilings which are costly and often impair natural ventilation);

g. changes of floor levels to obviate hazards to disabled people (see paragraph 5.21);

h. fire precautions (see paragraph 5.7 to 5.10); and

j. physical constraints to adaptation such as load-bearing walls and columns.

5.16 Having decided that existing premises are suitable for upgrading or conversion, the main requirement will be to assess how best the accommodation can be adapted so as to facilitate the practice of modern care.

The main environmental factors which should be considered are the same as for new building – see paragraphs 5.12 and 5.13.

5.17 Upgradings must conform to current fire safety and other statutory regulations. It is very difficult to estimate the fire resistance of floors, walls and doors of existing buildings.

5.18 This summary of the main aspects of upgrading is general in character and it is recognised that each upgrading project will present its own individual problems. In many instances compromises may have to be made between Building Note standards and what is possible to achieve. Upgradings should be functionally sound – not merely cosmetic – and appropriate for the projected needs of patients and staff for a number of years to come.

Damage in Health Buildings

5.19 When designing and equipping health buildings, the likely occurrence and effects of accidental damage should be considered. Damage in health buildings has increased over the years due to the use of heavier mechanical equipment for the movement of patients and supplies and, to some extent, as a result of lightweight, often less robust, building materials. Most damage to doors and to floor and wall surfaces is caused by wheeled traffic. Measures to minimise damage should be taken in the form of protective corners, buffers and plates, and to proper continuation of floor surfacing ie strong screeds and fully bonded floor coverings. Protective devices should be capable of being renewed as need arises. Reference should be made to the relevant British Standards, to the advice in the Department's DS (Supply) letter 42/75 dated 5 August 1975 on the buffering of movable equipment, and to the guidance contained in Volume 2 of HBN 40 "Common Activity Spaces". Further information is provided in Health Technical Memoranda 56, 58 and 61.

Security

5.20 Assaults on hospital staff and theft on NHS property are recognised problems. The safety of babies temporarily unattended in postnatal areas or neonatal units must also be considered. The project team should discuss security with the hospital security personnel and the district security officer or adviser at an early stage in the design of the building. Fire and Security Officers should be consulted concurrently because the demands of security and fire safety may sometimes conflict. The attention of planners is drawn to Circular HN(84)26, dated December 1984 (in Wales Circular WHN(85)1), about Security, and the NHS Security Manual issued with the Circular.

Disabled People

5.21

a. It is essential to ensure that suitable access and facilities are provided for disabled people who have problems of mobility or orientation. This includes, besides the wheelchair-bound, those who for any reason have difficulty in walking and those with a sensory handicap such as a visual or hearing impairment. Authorities are reminded of the need to comply with the provisions of the Chronically Sick and Disabled Persons Act 1970 as amended by the Chronically Sick and Disabled Persons (Amendment) Act 1976, the Disabled Persons Act 1981, and a new Part M in Schedule 1 of the Building (Disabled People) Regulations 1987 which remodel the existing Regulations on access and facilities for disabled people. Attention is also drawn to BS 5810: 1979 "Access for the Disabled to Buildings" (under review). One of the effects of the 1981 Act is to apply this British Standard to premises covered by the 1970 Act, which includes those open to the public. Compliance with the British Standard will also meet the "deemed to satisfy" provisions of Schedule 1 of the Building Regulations 1987 in terms of design.

b. Project teams are recommended to refer to the Common Activity Spaces HBN 40, Volume 4 "Designing for Disabled People". This gives guidance and a set of Ergonomic Data Sheets on access space and equipment relating to disabled people in health buildings.

c. If public telephones are provided in the Maternity Department, the telephones equipment/handset should be fitted with an induction coupler to assist deaf people using a hearing aid.

Education and Training

Undergraduate Medical Students

5.22 If it has been agreed that the teaching of undergraduate medical students will take place in the accommodation, and their numbers necessitate additional space, this should be provided as part of the overall requirements for the department. Reference should be made to the Department's letter DS 65/74 about teaching hospital space requirements, issued on 22 March 1974, and letter DS 86/74 dated 27 March 1974. (In Wales, reference should be made to letter HSD 3/57/1 dated 29 April 1974).

Postgraduate Medical Education

5.23 Although some education requiring special facilities will take place in the district's education centre, some teaching has to take place in the department. Apart from the use of seminar rooms, no special facilities are normally required elsewhere in the hospital.

Nurse and Midwife Education

5.24 All districts undertake nurse and midwife education, and most have the approval of the statutory body to conduct qualifying courses. As qualifying and formal post-basic courses are largely clinically based, officers of the statutory body visit teaching accommodation and clinical areas to monitor facilities and practice, and the volume and range of work.

In clinical areas seminar rooms are required at ward or unit level. In addition, an office base for the midwife/clinical teacher is required. Theoretical elements of courses will be undertaken in the nurse and midwife education component of the education centre, or the school(s) of nursing and midwifery.

If satellite educational accommodation is required such as teaching accommodation for midwifery education in a maternity unit, then the requirements should be determined using the methodology described in "Accommodation for Education and Training" in HBN 42 (in preparation). This accommodation should be included when assessing the District's total requirements for education accommodation.

Other staff

5.25 The requirements of students in professions other than medicine and midwifery and the trained staff will need to be taken into account, and the appropriate people and/or bodies should be consulted at the initial planning stages.

Natural and Artificial Lighting

5.26 A light and pleasant interior is required with an adequate level of illumination that can be varied to suit functional activities. Because natural lighting is variable in quality and quantity the provision of a comprehensive artifical lighting installation is essential.

5.27 The orientation of accommodation is an important consideration in any building scheme. Sunlight within a building enhances colour and shape and helps to make a room bright and cheerful. Glare should be minimised and may be controlled by curtains or blinds. Solar gain can be mitigated by external screens or by architectural detailing of the shape of windows and depth of reveals. (See HTM 55 "Windows", section 2.2).

5.28 Artificial lighting should be capable of providing the required levels of illumination at all times; it also has an important contribution to make to the aesthetic appeal of the interior. The design should provide task lighting of the required intensity with low-contrast glare-free background illumination. Clinical and bedded areas will require the use of approved colour rendering light sources.

Ventilation

5.29 Natural ventilation is usually caused by the effect of wind pressure. It will also occur to some extent if there is a temperature difference between inside and outside the

building. This thermo-convective effect frequently predominates when the wind speed is low and will be enhanced if there is a difference in height between inlet and outlet openings. Ventilation induced by wind pressure can promote high air change rates through a building if air is able to move freely within the space from windward to the leeward side of the building. Internal partitions, fire compartment walls and closed doorways can however often impede the flow path and when this happens the process will be more dependent on single-sided ventilation. Nevertheless, even with this degree of obstruction to air movement, acceptable ventilation may still be obtained without excessive window openings which could prejudice safety, security and comfort. Some types of windows, eg vertical sliding, can enhance single-sided air exchange by temperature difference and these will improve the overall rate of natural ventilation in protected or sheltered areas where the effect of wind pressure is likely to be minimal. Section 2.3 of HTM 55 "Windows" and BS 5925 – Code of Practice for Design of Buildings – provides further guidance on this subject.

Flooring

5.30 It is important to select a floor covering which contributes towards the creation of an attractive environment, but which does not present a hazard to disabled people or the movement of wheeled equipment. It is important that whatever floor covering is chosen can be effectively cleaned, maintained and, where necessary, repaired. Rapid developments in soft floor covering technology have produced a wide variety of new materials. (See report of the Floor Covering Study Group issued to Health Authorities with HN(78)32 – WHN(78)92 in Wales – and Health Technical Memorandum 61 – "Flooring"). Floors should not present or appear to present a slip hazard and the patterning should not produce disorientation. Changes of floor level should be avoided wherever possible. Surface drag, static electricity, flammability, and infection hazards are other factors which need to be considered. (See also "Maintenance and Cleaning" – paragraph 5.46).

Design features

5.31 The physical limitations of many people impose special demands on internal design and fittings. Reference should be made to the ergonomic drawings in Volume 1 of HBN 40 "Common Activity Spaces" and to Volume 4. Features requiring special consideration are:

Doors

5.32 Doors should be wide enough to allow a clear space for people using walking aids and for the passage of wheelchairs. In some parts of the hospital, doors must be wide enough to allow the passage of beds and complementary equipment eg dripstands. Door springs should not be too strong, otherwise access for disabled people is very difficult. This also applies for the passage of beds etc. Lever handles should be 900 mm above floor level. When glazed doors are provided careful consideration must be given to the size and height of the glass panels. If automatic door releases are required to meet fire regulations, they should be carefully selected to minimise interference with day to day activities. In an emergency it must be possible to enter WCs from the outside, and doors should be fitted with easygrip bolt handles. Bi-fold doors are not suitable. Reference should be made to HTMs 58 and 59 for information on suitable components and for further guidance.

Windows

5.33 The design of windows is inevitably a compromise. In addition to the various statutory requirements, the following aspects also require consideration: illumination and ventilation; insulation against noise, thermal loss or solar gain; energy conservation; the prevention of glare and the provision of a visual link with the outside world. Requirements for cleaning the inside and outside of windows should not be overlooked. Guidance on types of window and on safety aspects is contained in HTM 55 "Windows". The matter of privacy must always be considered.

Internal Spaces

5.34 Internal rooms may contribute to economy in planning but the resulting continuous need for artificial lighting and mechanical ventilation will add to both capital and running costs. Such rooms do not provide good working conditions and staff may therefore be difficult to retain. Internal spaces should be used only for activities of infrequent or intermittent occurrence or which demand a controlled environment. Rooms that are likely to be occupied for any length of time by staff or patients should have windows.

Courtyards

5.35 There are several reasons why courtyards may usefully be provided in hospital buildings. Firstly, they enable more rooms to receive natural daylight and ventilation. Secondly, they provide an outlook which can compensate for the lack of a longer view. Suitable layout and planting can provide a stimulating outlook and can help to preserve privacy in surrounding rooms. Ground-cover planting is often more successful than grass and is easier to maintain.

5.36 It is desirable to provide access to courtyards from day rooms or corridors wherever possible and thresholds should be designed to facilitate movement of disabled people. Seating should be provided. Access for maintenance and cleaning should be from a hospital street or other corridor so that patients and staff are not disturbed. Adequate water points, power-points and lighting, if necessary, should be provided in all courtyards.

5.37 Reference should be made to HBN 45 "External Works for Health Buildings" (in preparation).

Critical Dimensions

5.38 The figures in Appendix 2 contain information on critical dimensions for an activity mentioned in this Note which is not included in the "Common Activity Spaces" Health Building Note (HBN 40).

Information Technology in the NHS: Provision for Automatic Data Processing (ADP)

5.39 Information technology has a central role in health management. The use of computers and telecommunications – and indeed the rate of technological innovation – continues to increase. The implications for building project teams are threefold: firstly, a requirement for the housing of the computer(s); secondly, a requirement for the provision of ducts for transmission cabling; and thirdly,

sufficient space and adequate power supplies for modems, visual display units, printers and associated software and stationery. Even if the introduction of automatic data processing is not proposed at the time that the project team completes its brief, it will be advisable to design in such a way that equipment can be introduced easily and quickly at some later date.

5.40 There are two principal matters of concern: visibility and noise. Visual display units (VDUs) are now a familiar sight and it will easily be appreciated that they cannot be reduced beyond a certain size. Consequently, sufficient and convenient space must be provided for them; also, since the brightness of the letters displayed on the screen cannot exceed a certain limit, special attention must be given to the ambient lighting to ensure that the contents of the screen are legible. Space will be required in front of the screen for a keyboard. The problem of noise arises from the alternative ways of obtaining data from the computer, namely a printer which can provide printed paper copies of the data in the computer. Much has been done to reduce noise and the latest laser printers work reasonably silently. Noise may not be to noticeable during normal working hours, but during quiet hours it will probably not be acceptable unless special arrangements are made, such as the positioning of the printer at a site remote from patient areas.

5.41 Computing expertise is now widely available in the NHS and project teams should ensure that, at an early stage, they inform themselves concerning current and projected local computing policies, and that their proposals conform with them.

5.42 It is essential that a computer terminal and the associated equipment referred to above are located at the reception counter in the maternity outpatient suite, and at the staff bases in the delivery suite, wards and neonatal unit – see paragraphs 3.8, 3.54, 3.110 and 3.144.

Component Data

5.43 The Component Data Base in its previous forms contained specifications and design guidance together with lists of selected components on firms producing those components for use in health buildings.

Component Data Base now consists of a series of Health Technical Memoranda which provide specification and design guidance on building components for health buildings which are not adequately covered by current British Standards. No firms or products are now listed.

The numbers and titles of the HTMs in the series are:

54 Building Components – Introduction (in preparation)
55 Windows
56 Partitions
57 Internal glazing
58 Internal doorsets
59 Ironmongery
60 Ceilings
61 Flooring
62 Demountable storage system
63 Fitted storage system
64 Sanitary assemblies
65 Signs
66 Cubicle curtain track
67 Laboratory fitting out
68 Panels for sanitary assemblies
69 Protection
} (in preparation)

The technical information in this series is the result of research and development funded by the Department as part of collaborative working arrangements over a number of years between the Department, the NHS and Industry through the medium of the Component Data Base, managed by a Steering Group mainly staffed by NHS professionals.

Signposting

5.44 HBN 40 "Common Activity Spaces, Vol 2: Corridors", and the Health Signs Manual issued in November 1984 as Health Technical Memorandum 65, should be consulted for general guidance.

Portering

5.45 Movement of goods or patients within, to or from the department may be beyond the capacity of the occupants. This will generate requirements for portering assistance.

Maintenance and Cleaning

5.46 Materials and finishes should be selected to minimise maintenance and be compatible with their intended function. Building elements that require frequent redecoration or are difficult to service or clean should be avoided. Special design consideration should be given to elements such as entrances, corners, partitions, counters and any others which may be subjected to heavy use. Floor finishes should be restricted in variety and, where soft floor coverings are specified and spillage is anticipated, should have a backing impervious to fluids and a non-absorbent pile. Wall coverings should be chosen with cleaning in mind.

Health Technical Memoranda 56, 58 and 61 give guidance on these aspects for partitions, internal doorsets and flooring.

Administration

5.47 Offices will be needed in the maternity department for senior medical staff, the head midwife, community midwifery staff, two midwife managers and social work staff. Offices will also be needed for clerical/secretarial support staff for the above categories.

5.48 Reference should be made to Health Building Note No 40 "Common Activity Spaces", Volume 1.

6 Cost Information

Introduction

6.1 For all types of health buildings it is clearly of vital importance that building costs and revenue expenditure should be kept as low as possible consistent with acceptable standards. Within this general context Building Notes provide a synopsis of accommodation for health buildings which the Department, in conjunction with the National Health Service, recommends for the provision of a given service.

Works Costs

6.2 To prepare an estimate of the works cost for a scheme, reference should be made to the Capricode Health Building Procedures manual (Chapter 1, Stage 1, Annexe 1.c.). The total departmental cost for a scheme is derived by aggregating the cost of the functional units, Essential Complementary Accommodation (ECA) and Optional Accommodation and Services (OAS) as appropriate to the particular scheme.

6.3 The cost allowance covers the building and engineering guidance set out in this Note. The costing of the functional units assumes that they will be incorporated into a whole hospital to form a complete department.

Functional Units

6.4 The following functional units have been costed. Should a larger number of beds be required more than one ward may be selected: (see paragraph 2.15).

Outpatient suite

8 Consulting/Examination rooms

Delivery suite

2,600–3,000 Births per annum

Ward

24 Beds

Neonatal unit

Five sizes (6, 8, 10, 12 and 20 Cots)

Schedules of activity spaces and areas used for costing for each functional unit are provided at the end of this Chapter.

Outpatient Suite

6.5 A suite has been costed containing eight consultation/examination rooms, together with reception, waiting, offices, utility, WC and storage facilities adequate for this suite.

Delivery Suite

6.6 The costed delivery suite has the capacity to cater for between 2,600 and 3,000 births per year and consists of delivery rooms and theatre suite with all necessary anaesthetic, utility and sanitary facilities, together with offices and stores.

Ward

6.7 The ward is divided into small multi-bed and single rooms and contains utility, sanitary, staff and storage facilities to serve 24 beds (see especially paragraph 2.15).

Neonatal Unit

6.8 Five sizes of unit have been costed allowing full flexibility for the project team to choose a unit according to its particular needs. Each size of unit has appropriately sized accommodation for infant care with sanitary, utility and storage areas, together with staff and visitors' facilities.

6.9 A 20 cot unit will have sub-Regional neonatal intensive care functions. Each unit should always contain accommodation for mothers and siblings to stay overnight, in or close to the unit.

Essential Complementary Accommodation (ECA)

6.10 This comprises activity spaces which are essential to the running of the unit but which in certain circumstances may be available in a convenient location elsewhere in the hospital. The amount of ECA which will be needed to be provided as part of an individual project will therefore vary according to the extent of the provision available elsewhere. The items costed in this Note are listed in the schedule at the end of this chapter.

Optional Accommodation and Services (OAS)

6.11 This Note, where appropriate, draws attention to alternative ways of providing services or facilities, including the likely cost implications. The information will enable project teams to select the solution which is most suitable to their needs. OAS costed in this Note is listed in the schedule at the end of this chapter.

Dimensions and areas

6.12 In determining spatial requirements the essential factor is not the total area provided but the critical dimensions, ie those dimensions critical to the efficient functioning of the activities to be carried out. To assist project teams in preparing detailed design solutions for the rooms and spaces the Department has carried out ergonomic studies to establish critical dimensional requirements. The results of these studies appear as ergonomic diagrams in Appendix 2 of this Note and in Health Building Note No 40, "Common Activity Spaces".

6.13 For development planning and at the earliest stages of a departmental design it may be convenient for designers to have data available which enables them to make an approximate assessment of the sizes involved. For this reason the schedules of areas, prepared for the

purpose of establishing the cost allowances, are included at the end of this chapter.

6.14 It is emphasised that the areas published DO NOT represent recommended room sizes, maximum or minimum allowances, nor are they to be regarded in any way as specific individual entitlements.

Circulation

6.15 Space for circulation, which includes allowances for planning provision, engineering zone and partitions, has been added to each Functional Unit and is included in the cost allowances and areas of ECA and OAS.

Communications Space

6.16 Staircases, lifts and plant rooms, with the exception of electrical switchrooms, are not included in the cost allowances. Corridors within the department, but not any linking it with other departments, are included in the allowances.

Engineering

Engineering Zone

6.17 The cost allowances provide for a heating and ventilation zone adjacent to external walls and for small vertical ducts. The space is included in the schedules as part of the circulation provision.

Engineering Services

6.18 The following engineering services as described in the Engineering Chapter are included in the cost allowances for this department. Primary engineering services are assumed to be conveniently available at the boundary of the department.

a. **Mechanical Services**

Heating:
Low pressure hot water system. Maximum touch temperature generally 82°C, except 43°C in specified spaces.

Ventilation:
Balanced mechanical ventilation to the delivery rooms. Other areas mainly naturally ventilated, but with mechanical supply and extract to meet clinical and functional requirements.

Air-conditioned ventilation:
To operating suite and cot areas of the neonatal unit. Cooling plant included.

Cold water service:
Centrally supplied to service points, including drinking water and fire hose reels. Storage tanks excluded.

Hot water service:
Centrally supplied to service points. Storage excluded. Local thermostatic controls to reduce outlet temperatures to a maximum of 43°C in specified areas.

Medical gases:
Piped supplies of oxygen, nitrous oxide, vacuum and medical compressed air from the hospital centralised systems. Waste gas scavenging system in the operating suite and delivery suite.

b. **Electrical Services**

Departmental distribution switchboard.

General lighting as required by tasks. Fluorescent, tungsten, safety and emergency luminaires as appropriate.

Socket outlets and other power outlets for fixed and portable equipment. Supplementary equipotential earth bonding connections.

Stand-by and safety installations from the main hospital supplies. "No break" supply system for operating table luminaires in operating suite and for examination luminaires in delivery rooms.

Wireways for medical monitoring equipment in delivery suite and neonatal unit.

Patient/staff and staff/staff call system.

Fire, security, medical gases and drug cupboard alarm systems.

Impulse clocks.

Staff location extensions to the hospital system.

Radio and TV extensions to the hospital system.

Telephone internal distribution cabling and outlets. Handsets excluded.

Data transmission conduits only.

c. **Equipment (Group 1)**

Operating theatre table luminaires in operating theatre and abnormal delivery room.

Pendants with medical gases, scavenging and socket outlets in operating theatre.

X-ray viewers in operating theatre, abnormal delivery room and at ward base.

Disposal macerator in dirty utility rooms. (Delivery suite and wards).

Water boilers for beverage preparation in staff rooms. (OPD, Wards and Neonatal).

Schedules of Accommodation

Outpatients Suite

Activity Space	*Space Area Sq m*	*Qty*	*TOTAL AREA Sq m*
PATIENTS' FACILITIES			
Reception/Records	17.00	1.0	17.00
Waiting/Education /Play Area	51.50	1.0	51.50
Sub-Waiting	9.00	1.0	9.00
WC	3.00	3.0	9.00
Specimen WC/Wheelchair	4.50	2.0	9.00
CLINICAL/TREATMENT AREAS			
Consulting/Examination Room	15.50	8.0	124.00
UTILITIES			
Clean Utility	5.50	1.0	5.50
Dirty Utility	8.50	1.0	8.50
Cleaner's Room	6.50	1.0	6.50
Disposal Room	2.00	1.0	2.00
Switchroom	2.00	1.0	2.00
STAFF FACILITIES			
Office	9.00	3.0	27.00
STORAGE			
Equipment Store	5.00	1.0	5.00
Parentcraft Store	5.50	1.0	5.50
Linen Store	2.00	1.0	2.00
Net Total			283.50
Circulation Etc.			142.00
Gross Total			425.50
Departmental Areas	425 sq m		

Delivery Suite

Activity Space	*Space Area Sq m*	*Qty*	*TOTAL AREA Sq m*
PATIENTS' FACILITIES			
Visitors' WC	3.00	1.0	3.00
Sitting Room	11.00	1.0	11.00
Pantry/Beverage Point	7.50	1.0	7.50
CLINICAL/TREATMENT AREAS			
Delivery Room	19.00	8.0	152.00
Patient Shower/WC/Utility	11.00	4.0	44.00
Blood Bank/Blood Gas Analysis	5.50	1.0	5.50
UTILITIES			
Clean Utility	9.00	1.0	9.00
Dirty Utility	13.00	1.0	13.00
Cleaner's Room	6.50	1.0	6.50
Disposal Room	2.00	1.0	2.00
Switchroom	2.00	2.0	4.00
STAFF FACILITIES			
Staff Base	10.00	1.0	10.00
Office	9.00	3.0	27.00
Seminar/Staffroom	12.00	1.0	12.00
Male Staff Changing	12.00	1.0	12.00
Female Staff Changing	12.00	1.0	12.00
STORAGE			
Trolley/Wheelchair Park	2.50	1.0	2.50
Equipment Store	11.00	1.0	11.00
Linen Store	3.50	1.0	3.50
Dry Store	1.00	1.0	1.00

Activity Space	*Space Area Sq m*	*Qty*	*TOTAL AREA Sq m*
OPERATING SUITE			
Reception	19.00	1.0	19.00
Abnormal Delivery Room	30.00	1.0	30.00
Maternity Operating Theatre	34.50	1.0	34.50
Anaesthetic Room	15.00	1.0	15.00
Theatre Preparation/Supply	11.00	1.0	11.00
Scrub-up Bay	6.00	2.0	12.00
Dirty Utility	11.00	1.0	11.00
Male Staff Changing	12.00	1.0	12.00
Female Staff Changing	12.00	1.0	12.00
Recovery Area	29.00	1.0	29.00
Net Total			534.00
Circulation Etc.			267.00
Gross Total			801.00
Departmental Areas	800 sq m		

Ward Unit

Activity Space	*Space Area Sq m*	*Qty*	*TOTAL AREA Sq m*
PATIENTS' FACILITIES			
Dayroom	14.50	2.0	29.00
WC/Wash and Shower	5.50	4.0	22.00
Assisted Bathroom	8.50	1.0	8.50
Bathroom	4.00	1.0	4.00
Flower Bay	3.00	1.0	3.00
CLINICAL/TREATMENT AREAS			
6 Bedded Room	61.50	2.0	123.00
4 Bedded Room	43.00	2.0	86.00
Single Bedroom	13.00	2.0	26.00
Single Bedroom with WC/Shower	18.50	2.0	37.00
UTILITIES			
Clean Utility	10.00	1.0	10.00
Dirty Utility	13.50	1.0	13.50
Pantry	7.50	1.0	7.50
Disposal Room	2.00	1.0	2.00
Switchroom	2.00	1.0	2.00
STAFF FACILITIES			
Staff Base	10.00	1.0	10.00
Sister's Office	10.00	1.0	10.00
Doctor's Office/Interview	10.00	1.0	10.00
STORAGE			
Equipment Park	4.50	1.0	4.50
Linen Store	3.50	1.0	3.50
Dry Store	1.00	1.0	1.00
Equipment Store	9.00	1.0	9.00
Net Total			421.50
Circulation Etc.			145.00
Gross Total			566.50
Departmental Areas	565 sq m		

Neonatal Unit

Activity Space	*Space Area Sq m*	*6 Cots*		*8 Cots*		*10 Cots*		*12 Cots*		*20 Cots*	
		Qty	*TOTAL AREA Sq m*	*Qty*	*TOTAL AREA Sq m*	*Qty*	*TOTAL AREA Sq m*	*Qty*	*TOTAL AREA Sq m*	*Qty*	*TOTAL AREA Sq m*
PARENTS' FACILITIES											
Beverage Point	4.00	1.0	4.00	1.0	4.00	1.0	4.00	1.0	4.00	1.0	4.00
Visitors' Day/Play Room	11.00	1.0	11.00	1.0	11.00	1.0	11.00	1.0	11.00	1.0	11.00
CLINICAL/TREATMENT AREAS											
Single cot Nursery	12.00	2.0	24.00	2.0	24.00	2.0	24.00	4.0	48.00	4.0	48.00
Multi cot Nursery		1.0	18.50	1.0	24.00	2.0	37.00	2.0	37.00	4.0	74.00
Laboratory	4.00	1.0	4.00	1.0	4.00	1.0	4.00	1.0	4.00	1.0	4.00
Milk Kitchen	9.50	1.0	9.50	1.0	9.50	1.0	9.50	1.0	9.50	1.0	9.50
UTILITIES											
Utility Room		1.0	13.00	1.0	13.00	1.0	15.00	1.0	15.00	1.0	20.00
Cleaner's Room	7.00	1.0	7.00	1.0	7.00	1.0	7.00	1.0	7.00	1.0	7.00
Disposal Room	2.00	1.0	2.00	1.0	2.00	1.0	2.00	1.0	2.00	1.0	2.00
Switchroom		1.0	1.00	1.0	1.00	1.0	1.50	1.0	1.50	1.0	2.00
STAFF FACILITIES											
Staff Base	10.50	1.0	10.50	1.0	10.50	1.0	10.50	1.0	10.50	1.0	10.50
Nurse's office	9.50	1.0	9.50	1.0	9.50	1.0	9.50	1.0	9.50	1.0	9.50
Staff Changing		2.0	24.00	2.0	24.00	2.0	24.00	2.0	24.00	2.0	30.00
Seminar Room		1.0	9.50	1.0	9.50	1.0	14.00	1.0	14.00	1.0	22.00
STORAGE											
Equipment Store	6.00	2.0	12.00	2.0	12.00	3.0	18.00	3.0	18.00	4.0	24.00
Linen Store	2.00	1.0	2.00	1.0	2.00	1.0	2.00	1.0	2.00	2.0	4.00
Net Total			161.50		167.00		193.00		217.00		281.50
Circulation Etc.			80.50		83.50		96.50		108.50		140.50
Gross Totals			242.00		250.50		289.50		325.50		422.00
Departmental Areas		240 sq m		250 sq m		290 sq m		325 sq m		420 sq m	

Essential Complementary Accommodation

Activity Space	*Space Area Sq m*	*Circulation Etc Sq m*	*TOTAL AREA Sq m*	*Paragraph No*
Ultrasound Room	17.50	1.00	18.50	3.26
Snack Bar and Store	13.50	1.00	14.50	3.28
Doctor's Office/Overnight Stay	10.00	.50	10.50	3.159
Dayroom	14.50	1.00	15.50	3.107, 3.125
Seminar/Staffroom	12.50	1.00	13.50	3.19, 3.56
Consult/Examination Room	13.50	1.00	14.50	3.12, 3.127
Milk Kitchen Store	5.50	.50	6.00	3.128
Cleaner's Room	6.50	.50	7.00	3.129
Parents' Bedroom	9.50	.50	10.00	3.157
Parents' Shower	2.50		2.50	3.157
Parents' WC	2.00		2.00	3.157
Office	8.00	.50	8.50	3.159
Transport Incubator Bay	2.00		2.00	3.158

Optional Accommodation and Services

Activity Space	*Space Area Sq m*	*Circulation Etc Sq m*	*TOTAL AREA Sq m*	*Paragraph No*
Treatment Room	16.00	1.00	17.00	3.29
Staff Cloaks	12.00	1.00	13.00	3.30, 3.130
Interview/Examination Room	13.50	1.00	14.50	3.79
Emergency Obstetric Store	2.50		2.50	3.80
Milk Bank	4.00	.50	4.50	3.160

7 Activity Data

Introduction

7.1 The expression "Activity Data" refers to an information system developed to help project and design teams by defining the users' needs more precisely. This information constitutes the Activity Data Base, which was issued to Regional Health Authorities in England and to the Health Departments in Scotland, Northern Ireland and Wales in 1976. It comprises two types of information sheet: Activity Space Data Sheets (known as 'A' sheets) and their supporting Activity Unit Data Sheets (known as 'B' sheets).

7.2 'A' sheets record in more detail than is described in this Note each task or activity that is performed in a particular activity space (which may be a room, space or bay) together with details of the environmental conditions and the technical data necessary to enable the activities to be performed. Each 'A' sheet also contains a list of the titles and code numbers of the relevant 'B' sheets.

'B' sheets provide narrative text and graphics to scale relating to one activity. They show equipment fitted or supplied as part of the building, and the necessary engineering terminals. There are also "component B sheets" which show a range of particular components rather than an activity.

7.3 Further information about the use and preparation of Activity Data can be found in the "Guide to 'A' and 'B' Activity Data Sheets and their use in Health Building Schemes" which was issued to Regional Health Authorities in June 1980 and to NHS Authorities in Wales in November 1980. Copies of the Guide are available from Department's Health Building Directorate, Branch HBD3, Euston Tower, 286 Euston Road, London NW1 3DN.

Activity Data Applicable to this Note

7.4 The 'A' sheets recommended for the activity spaces described in this Note are either new sheets, amended ones, or selected from existing sheets. A list of 'A' sheet code numbers and titles is given on the following pages.

7.5 Further Activity Data Sheets may be selected, or drawn up by project teams to their own requirements, for any services not described in the Note or included in the list. Members of project teams are advised to contact their Regional Activity Data Co-ordinator/Welsh Office for information and advice about the selection of activity data, at an early planning stage.

However, in order to ensure consistent and economic provision, variations from the 'A' sheets recommended for the spaces covered in this Note should be considered only where it has been decided that the function of a space will substantially differ from that described.

List of Activity Data 'A' Sheets

Activity Space	Code Number	Para No in HBN
OUTPATIENT SUITE		
Reception/Records	J0419	3.7
Waiting/Education/Play Area	J1404	3.9, 3.10, 3.15 & 3.19
Sub-Waiting	J1202	3.9
WC	V1106	3.11
Specimen WC/Wheelchair WC	V1406	3.11
Consulting/Examination Room	C0215	3.12
Clean Utility	T0504	3.16
Dirty Utility	Y0409	3.17
Office	M0201	3.18
Cleaners' Room	Y1501	3.20
Equipment Store	W1605	3.21
Parentcraft Store	W1606	3.22
Disposal Room	Y0603	3.24
Linen Store	W1401	3.23
Switch Room	K0101	3.25
Ultrasound Room (ECA)	E0112	3.26
Venepuncture Room (ECA)	C1407	3.27
Snack Bar and Store (ECA)	F0305	3.28
Treatment Room (OAS)	X0107	3.29
Staff Cloakroom (OAS)	V0420, V0421 and V1005	3.30
DELIVERY SUITE		
Waiting Area	J1308	3.38
Visitors WC	V1106	3.39
Trolley/Wheelchair Park	G0110	3.38
Delivery Room	B1001	3.41
Patient's Shower/WC/Utility	V1615	3.48
Sitting Room	D1201	3.50
Blood Bank: Blood Gas Analysis	L0501	3.51
Clean Utility	T0501	3.52
Dirty Utility	Y0304	3.53
Staff Base	T0117	3.54
Pantry/Beverage Point	P0611	3.73
Office	M0201	3.55
Seminar/Staff Room	D0406	3.56
Male Staff Change	V0416	3.57
Female Staff Change	V0422	3.57
Staff WC	V1005	3.57
Staff Shower	V1605	3.76
Equipment Store	W1609	3.58
Linen Bay	W1602	3.58
Dry Store	W1423	3.58
Cleaners' Room	Y1503	3.59
Disposal Room	Y0605	3.60
Switch Room	K0101	3.77
OPERATING SUITE		
Reception Lobby	J0113	3.61
Abnormal Delivery Room	B1102	3.64
Operating Theatre	N0105	3.63
Anaesthetic Room	N0302	3.62
Theatre Preparation/Supply	W1607	3.75
Scrub-up Bay	N0201	3.63
Dirty Utility	Y0410	3.74
Staff Changing – male	V0514	3.76
Staff Changing – female	V0514	3.76
Staff WC/Shower	V1309	3.76
Recovery Area	B2409	3.69
Doctors Office/Overnight Stay (ECA)	M0902	3.78
Interview/Examination Room (OAS)	C0507	3.79
Ensuite Facilities for Interview/Examination Room (OAS)	V1719	3.79
Emergency Obstetric Store (OAS)	W1603	3.80
ANTENATAL AND POSTNATAL WARDS		
6-Bedded Room	B0805	3.98
6-Bedded Room (Additional Care)	B0901	3.98
4-Bedded Room	B0806	3.98
Single Bed Room	B0807	3.99
Single Bed Room with WC/Shower	B0808	3.99
Clean Utility	T0601	3.115
Dirty Utility	Y0310	3.116
Pantry	P0603	3.117
Day Space	D0807	3.107
Staff Base	T0117	3.110
Sisters Office	M0201	3.121
WC/Wash and Shower	V1612	3.111
Assisted Bathroom	V1723	3.114
Specimen WC	V1407	3.114
Bathroom	V1707	3.114

Activity Space	Code Number	Para No in HBN
ANTENATAL AND POSTNATAL WARDS—continued		
Flower Bay	Y1402	3.118
Equipment Parking	G0111	3.123
Interview Room/Doctors Office	M0201	3.120
Linen Room	W1422	3.122
Switch Room	K0101	3.124
Disposal Room	Y0605	3.119
Dry Store	W1423	3.122
Equipment Store	W1424	3.122
Day Room (ECA)	D1110	3.125
Seminar Room (ECA)	D0406	3.126
Consulting/Examination Room (ECA)	C0215	3.127
Milk/Kitchen Store (ECA)	P1003	3.128
Cleaners' Room (ECA)	Y1207	3.129
2-Cot Nursery (ECA)	B1203	3.99
Staff Changing – Male (OAS)	V0420	3.130
Staff Changing – Female (OAS)	V0421	3.130
NEONATAL UNIT		
Single Nursery	B1401	3.142
4-Cot Nursery	B1402	3.142
6-Cot Nursery	B1403	3.142
Staff Base	T0116	3.144
Utility Room	Y0504	3.145
Equipment Store	W1608	3.148
Beverage Point	P0702	3.154
Sister's Office	M0201	3.153
Linen Bay	W1602	3.147
Female Staff WC	V0902	3.151
Female Staff Changing	V0423	3.151
Male Staff WC	V0901	3.151
Male Staff Changing	V0424	3.151
Staff Shower	V1614	3.151
Cleaner's Room	Y1501	3.149
Disposal Room	Y0605	3.146
Switch Room	K0101	3.156
Visitors Day/Play Room	D1401	3.143
Laboratory	L1303	3.155
Milk Kitchen	P1004	3.152
Seminar Room	D0406	3.150
Parents' Bed Room (ECA)	D1502 and D1503	3.157
Parents' Shower (ECA)	V1605	3.157
Parents' WC (ECA)	V1106	3.157
Transport Incubator Bay (ECA)	W1610	3.158
Office (ECA)	M0201	3.159
Doctors Office/Overnight Stay (ECA)	M0902	3.159
Milk Bank (OAS)	P1005	3.160
Parent/Visitor Bath Room (OAS)	V1721	3.157

Appendix 1

Critical dimensions

Introduction

1. Critical dimensions are those dimensions which are critical to the efficient functioning of an activity; thus the size of components, their position and the space around them may all be critical to the task being performed. Guidance on these dimensions for a particular activity is provided in the form of *component-user data sheets*. These illustrate components, ie equipment, furniture and fittings, and provide ergonomic data on the space required for users to move, operate or otherwise use the component; information about the component, eg fixing heights, and the users, eg reach, is also provided. Component-user data sheets thus complement the information given on Activity Data 'B' sheets. (see Chapter 7).

2. This appendix contains sheets relevant to this Note. In addition, ergonomic data common to the design of a number of departments is contained in the Common Activity Spaces Health Building Note 40, to which reference should also be made.

Component dimensions

3. These relate to the size and position of components as follows:

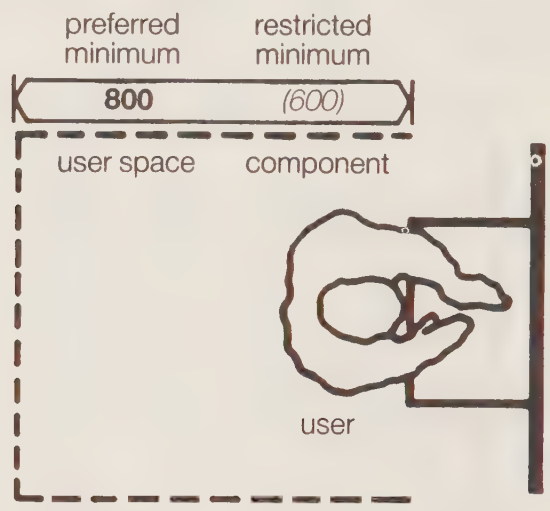
a. Sizes of components are shown thus

b. Preferred component fixing heights are shown as heights above floor level thus

(In some cases an acceptable range of fixing heights is also given in italics.)

Activity dimensions

4. Activity dimensions define the user space, which is the minimum space required to perform an activity. Two types of activity dimensions are given:

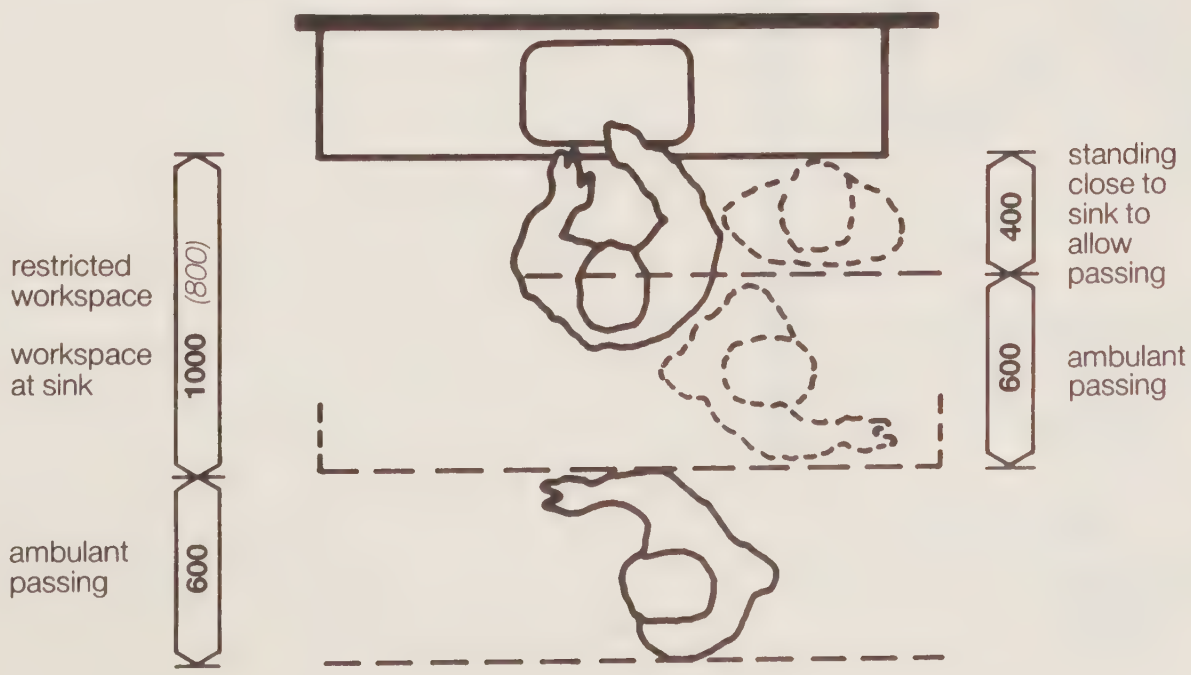


a. Preferred minimum – This defines the minimum space required to carry out an activity efficiently and is shown in bold type.

b. Restricted minimum – This will only allow the activity to be performed at the expense of the user experiencing some difficulty. It is not recommended for general application but may be appropriate when considering the overlapping that can be allowed when two user spaces are adjoining.

Selection of activity dimensions

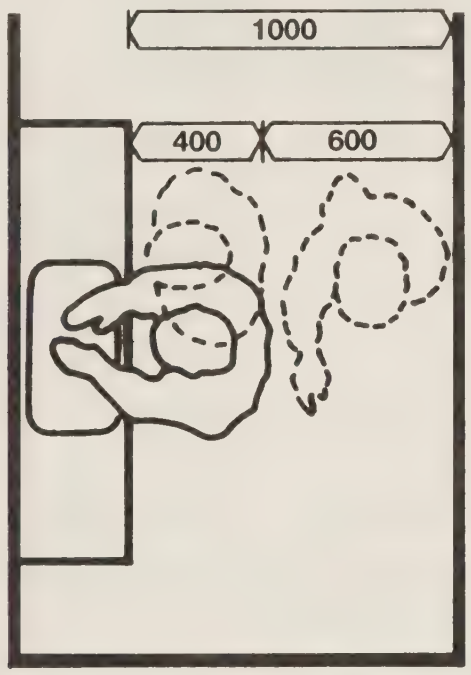
5. When using component-user data sheets to design activity space layouts, selection of the appropriate activity dimensions is essential for economy and efficiency. Selection should be based on careful consideration of the frequency, duration, timing and importance of the activities and also the number of people involved. A typical example of the use of a sink showing activity dimensions provided by the component user data sheet is shown below.



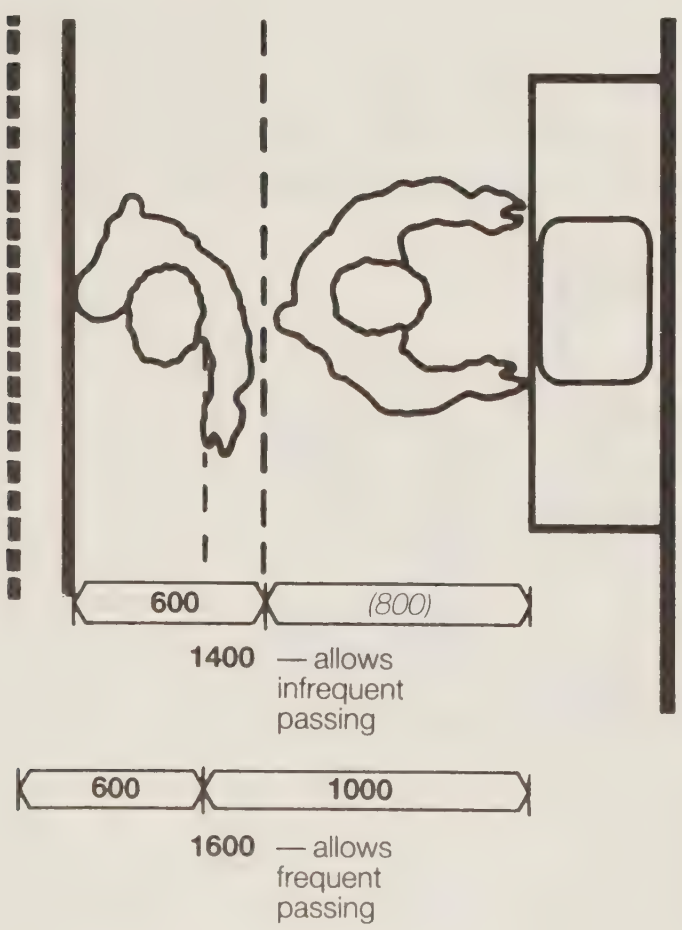
Examples

6. The following worked examples show the sink being used in 3 different situations and show how the appropriate dimensions would be selected but do not necessarily relate to this particular building guidance. These examples have been simplified and additional factors such as the movement of mobile equipment may also be critical.

a. If the room is normally occupied by one person only the 1,000 workspace dimension may be applicable. An (800) restricted dimension should not be used as this dimension is only applicable where two user spaces are adjoining, not where an individual user space is bounded by a wall or solid obstruction. If the person using the sink stops work and stands close to the sink, 1,000 is also sufficient space to allow a second person to pass, ie 600 + 400.

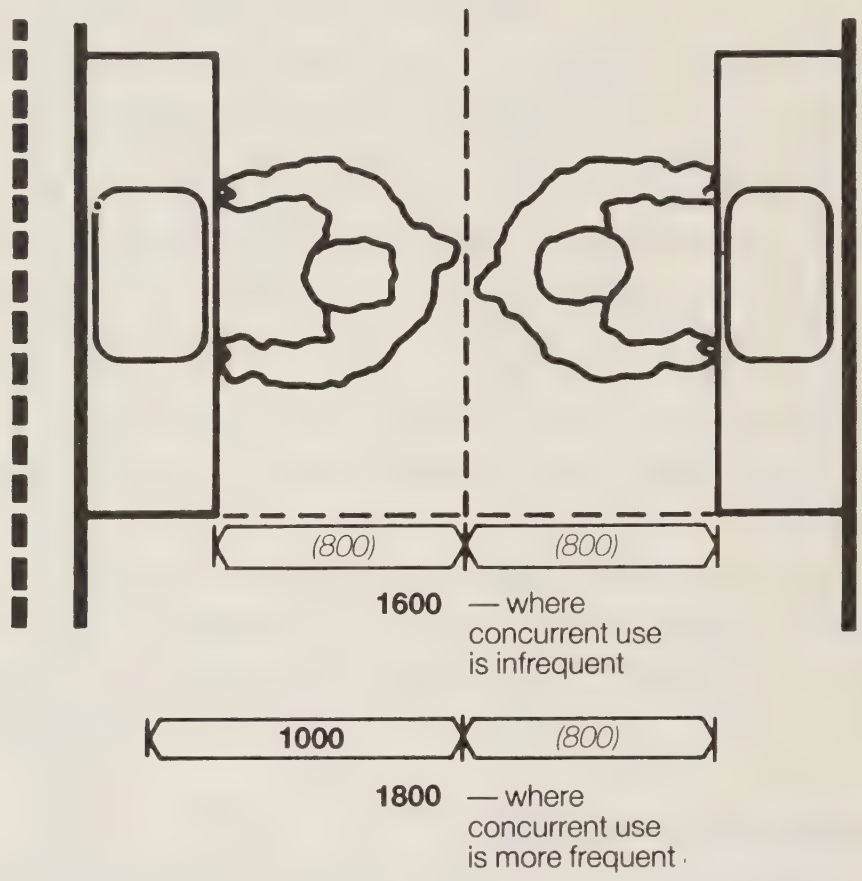


b. If space is required to allow a person to pass, without the user of the sink stopping work, then the 600 passing dimension is added to the workspace dimension. If passing is infrequent then temporary restriction of the sink user's space may be acceptable; this gives an overall dimension of 600 + (800) = 1,400. If passing is frequent and restriction of the sink user's space is not acceptable the overall dimension is 600 + 1,000 = 1,600.



c. Where space has to be provided to enable two sinks to be used concurrently the overall dimension between sinks will be the sum of the workspace dimensions, eg if concurrent use is infrequent and of short duration then (800) + (800) = 1,600 may be acceptable. Alternatively 1,000 + (800) = 1,800 allows the full workspace for one sink user and restricted space for the second user, where concurrent use of the sinks is more frequent.

Note. The passing of a third person between the two sink users may also be critical in this example. Where the sinks are staggered 1,400 may be acceptable as in example b.



Appendix 2: Ergonomic Drawings

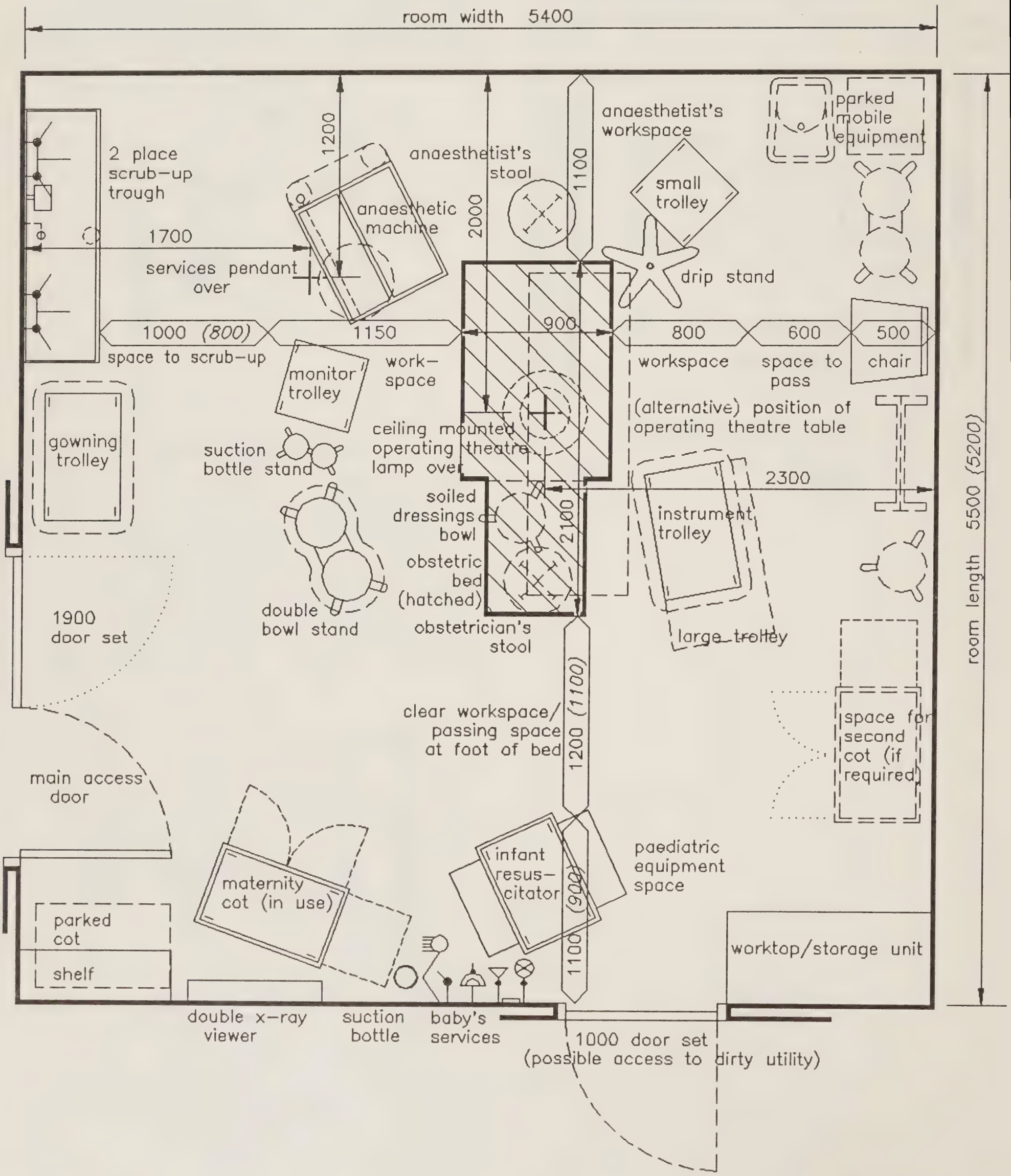
A single abnormal delivery room is set up in two ways, A and B, as in the following diagrams.

There is an Operating Suite in addition to the abnormal delivery room.

Abnormal Delivery Room

Diagram A

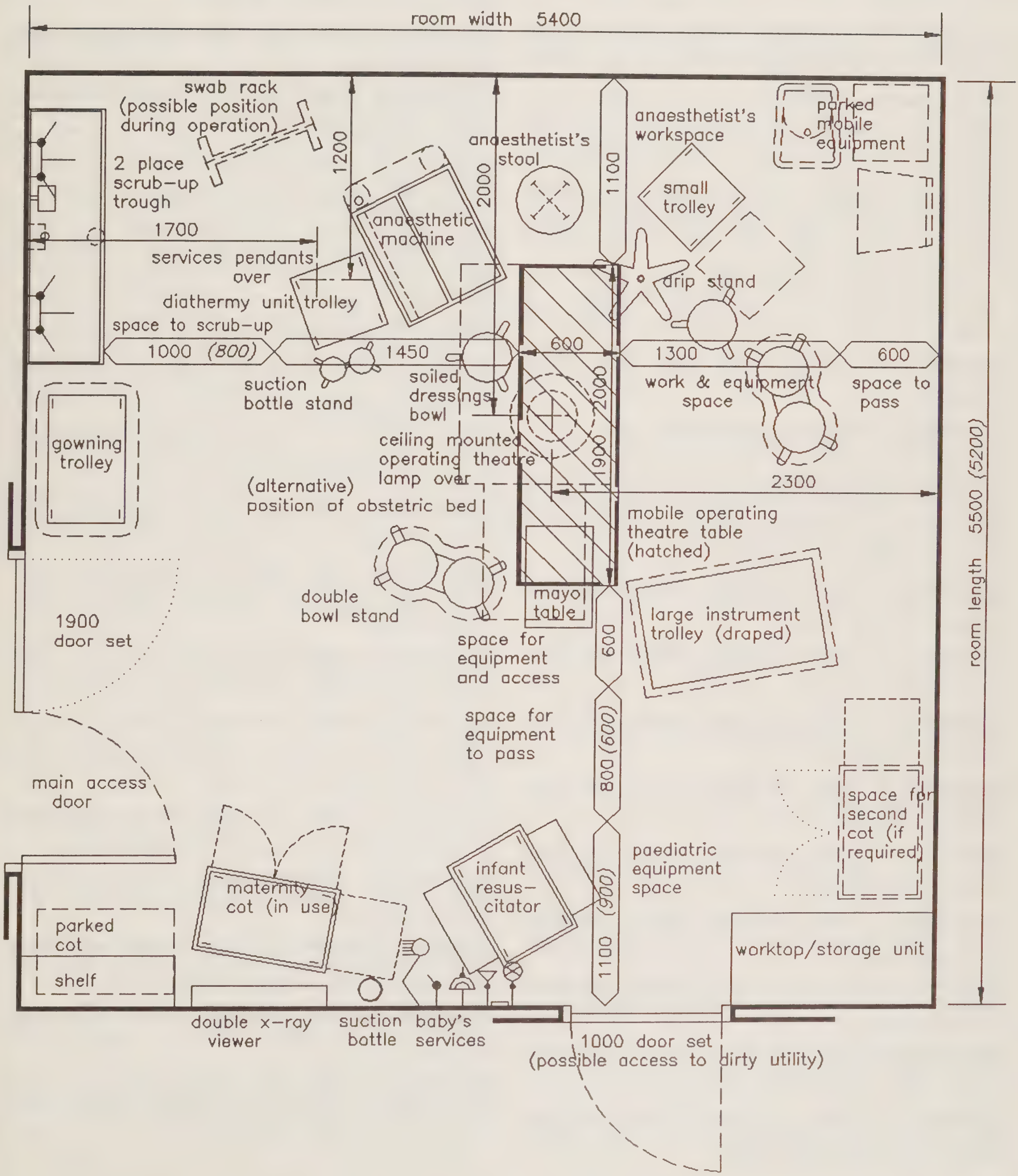
Set up for complicated vaginal delivery on an obstetric bed with space for paediatric activities and staff circulation.



Abnormal Delivery Room

Diagram B

Set up for deliveries requiring the use of an operating theatre table, including emergency Caesarean section operation. Room accommodates paediatric activities and staff circulation.



Bibliography

(not including engineering references which are listed at the end of Chapter 4)

Department of Health and Social Security. Perinatal and Neonatal Mortality – Government reply to the second Report of the Social Services Committee. London HMSO 1980.

Chronically Sick and Disabled Persons Act 1970 London HMSO 1970. As amended by the Chronically Sick and Disabled Persons (Amendment) Act 1976. London HMSO 1976.

Disabled Persons Act 1981. London HMSO 1981.

Department of Health and Social Security and Welsh Office. Health Building Note No 41: Accommodation for Staff Changing and Storage of Uniforms. London HMSO 1984.

Department of Health and Society Security and Welsh Office. Health Building Note No 40: Common Activity Spaces, Volume 1: Clinical, Sanitary, Administrative and Associated Spaces. London HMSO 1986.

Volume 2: Corridors. London HMSO 1986
Volume 3: Lifts and Stairways. London HMSO 1989
Volume 4: Designing for Disabled People. London HMSO 1989

Department of Health and Welsh Office. Health Building Note No 42: Accommodation for Education and Training (In preparation)

Department of Health and Welsh Office. Health Building Note No 45: External Works for Health Buildings (In preparation).

Department of Health and Social Security, Scottish Home and Health Department, Welsh Office and Department of Health and Social Services (Northern Ireland). Safety Information Bulletin No 37. SIB(87)79, Anaesthetic Machines: Use of Flammable Agents. November 1987

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 55: Windows. London HMSO 1985. 21pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 56: Partitions. London HMSO 1986. 43pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 57: Internal Glazing. London HMSO 1986. 13pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 58: Internal Doorsets. London HMSO 1986. 29pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 59: Ironmongery. London HMSO 1986. 37pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 60: Ceilings. London HMSO 1985. 29pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 61: Flooring. London HMSO 1985. 42pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 62: Demountable Storage System, London HMSO 1986. 32pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 63: Fitted Storage System. London HMSO 1986. 32pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 64: Sanitary Assemblies. London HMSO 1985. 64pp

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 65: Signs. London HMSO 1984. 92pp.

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 66: Cubicle Curtain Track. London HMSO 1985. 5pp.

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 81: Firecode: Fire precautions in new hospitals. London HMSO 1987.

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 82: Fire Alarm and detection systems. London HMSO 1982. 53pp.

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 83: General Fire Precautions. London HMSO, 1982 26pp.

Department of Health and Social Security and Welsh Office. Health Technical Memorandum No 86: Safety evaluation scheme. (In preparation).

Department of Health and Social Security and Welsh Office. Promoting non-smoking on NHS premises. HC(86)14. DHSS, 1986 (in Wales, WKO(85)31)

Department of Health and Social Security and Welsh Office. Upgrading and adaptation of existing buildings. WKO(81)4. DHSS, 1981 (In Wales AWO(81)8). July 1981.

Department of Health and Social Security and Welsh Office. Maternity Department in a District General Hospital – Interim Design Guidance issued with DS Letter 177/73, London HMSO July 1973.

Department of Health and Social Security and Welsh Office. Teaching Hospital Space Requirements. DS letter 65/74. Issued 22 March 1974.

Department of Health and Social Security and Welsh Office. Hospital Building – Teaching Hospital Space Requirements. DS letter 86/74. Issued 27 March 1974 (HSD 3/57/1 issued 29 April 1974 in Wales)

Department of Health and Social Security and Welsh Office. WKO Letter (81)4 – Upgrading and Adaptation of Existing Buildings – Revision of DS 183/74. 24 July 1981.

Department of Health and Social Security and Welsh Office. Buffering of Movable Equipment. DS(Supply) letter 42/75. 5 August 1975.

Department of Health and Social Security and Welsh Office. Report of the Floor Covering Study Group. Issued with HN(78)32 in 1978. (WHN(78)92 in Wales).

Department of Health and Social Security and Welsh Office. Security. HN(84)26, issued in December 1984 (WHN(85)1 in Wales).

Department of Health and Social Security and Welsh Office. Capricode Health Building Procedures. Issued to Health Authorities with HN(86)32 in October 1986.

Department of Health and Social Security and Welsh Office. FIRECODE: Policy and Principles. London HMSO November 1987.

Department of Health and Social Security and Welsh Office. FIRECODE: Directory of Fire Documents. London HMSO November 1987.

Department of the Environment. The Building Regulations 1985, Schedule 2. London HMSO 1985.

Department of the Environment. The Building Regulations 1987 (Schedule 1). London HMSO 1987.

Department of the Environment. The Building (Disabled People) Regulations. 1987. Part M, Schedule 1. London HMSO 1987.

British Standards Institution. BS 5810: 1979. Access for the disabled to buildings.

British Standards Institution. BS 5925: A code of practice for the design of buildings.

Department of Health and Social Security and Welsh Office. Activity Data Base. Issued to Regional Health Authorities in 1976. London HMSO 1976.

Department of Health and Social Security and Welsh Office. Component Data Base Mark 3. London HMSO 1979–83.

Department of Health and Social Security and Welsh Office. Guide to 'A' and 'B' Activity Data Sheets and their use in Health Building Schemes. Issued to Regional Health Authorities in June 1980. London HMSO 1980.

Department of Health and Social Security. Food Hygiene and Pest Control in the Health Service. HC(86)14, issued in November 1986 (WHC(87)7 in Wales).

Department of Health and Social Security. Health and Safety at Work: Crown Immunity. HC(87)3, issued in January 1987 (WHC(87)8 in Wales).

Department of Health. Building Legislation Compliance Procedures. HC(88)60/HC(FP)(88)29, issued in December 1988.

Further Reading

Maternity Services Advisory Committee. Maternity Care in Action –

Part I: Antenatal Care (September 1982) *
Part II: Care during Childbirth (Intrapartum Care) (30 January 1984) *
Part III: Care of the Mother and Baby (Postnatal and Neonatal Care) issued with DHSS DA Letter DA(85)4 in February 1985

* Both issued with DHSS DA letter DA(84)4

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